Brush Cutters, Trimmers, Pruners, Pruning Saws, Hedge Trimmers, Ice Drills, Blowers

Workshop Manual

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Contents

The Manual covers the models:

265, 250, 252, 240/245

225 / 232 / 235 / 240 RBD

322/325

122, 32, Mondo

250PS, 235 P

225 H 60 / 225 H 75

225AI15, 225AI25

18H, 140B, 141B

132HBV, 225BV, 225HBV

Husqvarna

General recommendations

The workshop used to carry out repairs must be equipped with safety devices in accordance with local directives.

No one may carry out repairs without first having read and understood the contents of this Workshop Manual.

The boxes below can be found in appropriate parts of this manual.

WARNING!

The warning box warns of the risk for personal injury if the instructions are not followed.

NOTE!

This box warns of damage to material if the instructions are not followed.

The machine is type approved for safety in accordance with applicable legislative demands with the equipment specified in the Operator's Manual. The assembly of other equipment or accessories or spare parts not approved by Husqvarna can result in the failure to meet these safety demands and that the person carrying out assembly bears responsibility for this.

Bear in mind:

- Do not start the engine without the clutch drum and driveline fitted as the clutch can become detached and cause severe personal injury.
- Do not touch hot components, e.g. the muffler and clutch before they have cooled sufficiently to avoid burns.
- Avoid getting fuel or oil on your skin or in your mouth. Use a barrier cream on your hands. This reduces the risk of infection and makes dirt easier to wash away. Long term contact with engine oil can represent a health hazard.
- Never start the engine indoors. Exhaust fumes are poisonous!
- Wipe up oil spills from the floor immediately to avoid slipping.
- Do not use tools that are worn or fit badly, for example on nuts and bolts.
- Always work on a clean bench.
- Always work logically to ensure all parts are fitted correctly and that nuts and bolts are tightened.
- Use the special tools where recommended to be able to carry out the work correctly and efficiently.

Fire risk

Handle fuel with respect as it is extremely inflammable.

Do not smoke and ensure there are no open flames or sparks in the vicinity.

Make sure there is a working fire extinguisher close at hand.

Do not try to extinguish a petrol fire with water.

Poisonous fumes

When using cleaning agents read the instructions carefully.

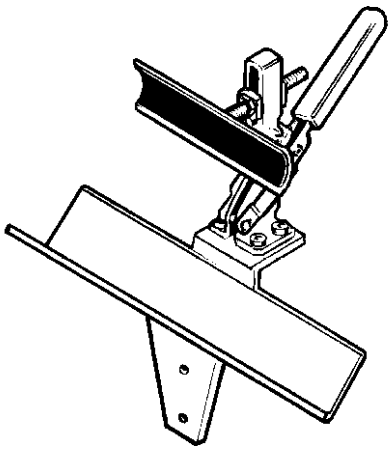
Ensure there is good ventilation when handling petrol and other volatile fluids.

The engine's exhaust fumes are poisonous. Test run the engine outdoors.

Special tools

Some of the work described in the Workshop Manual requires special tools. In each section where this is necessary there is a picture of the tool and an order number.

We recommend the use of special tools in order to avoid expensive damage to parts in question and personal injury and to provide an efficient repair procedure.



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Contact faces and gaskets

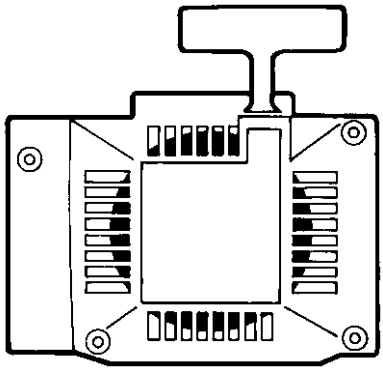
Ensure all surfaces are clean and free from gasket residue, etc. When cleaning use a tool that will not damage the contact face. Any scratches or unevenness should be removed using a flat fine cut file.

Sealing rings

Always replace a sealing ring that has been dismantled. The sensitive sealing lip can easily be damaged resulting in inferior sealing capacity. Surfaces which the seal shall seal against must also be completely undamaged. Lubricate the sealing lip with grease before it is fitted and ensure that it is not damaged e.g. by shoulders and splines on a shaft. Use tape or a conical sleeve as protection. It is important that the sealing ring faces in the right direction for it to act as it is intended.

Starter

1.



Contents

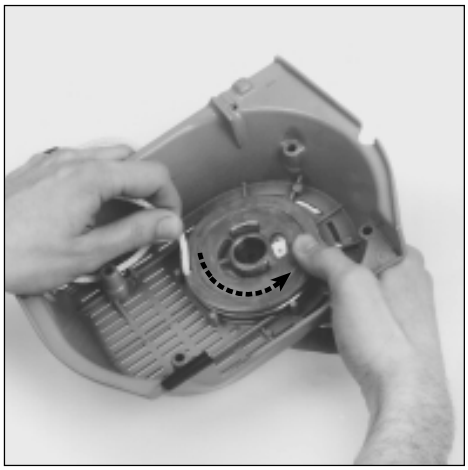
WARNING!

Protective glasses must be worn when working on the starter to prevent injury to the eyes, if for some reason, the return spring should fly out.

Dismantling

General

Dismantle the starter from the engine body.



Model 265

Dismantling

Release the spring pressure.

Remove the screw and washer in the centre of the starter pulley and bearing sleeve.

Lift out the starter pulley.

Dismantling

General

Remove all bolts and lift off the starter.

On some models the cylinder cover and tank filler cap must be removed.

Model 265

Dismantling

Release the spring pressure. Pull out the starter cord approx. 30 cm.
Hold the starter pulley with your thumb and place the cord in the cut-out on the starter pulley rim.
Let the starter pulley slowly recoil.

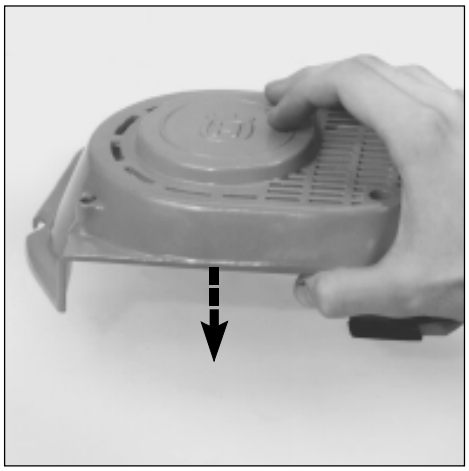
NOTE!
Stop the spring with your thumb.

WARNING!
Exercise care so that the screw tip on the cord attachment does not injure your thumb.

Remove the screw and washer in the centre of the starter pulley and bearing sleeve.

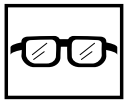
Lift out the starter pulley carefully so that the spring does not follow and fly out.

WARNING!
Wear protective glasses. The return spring can fly out and cause personal injury.

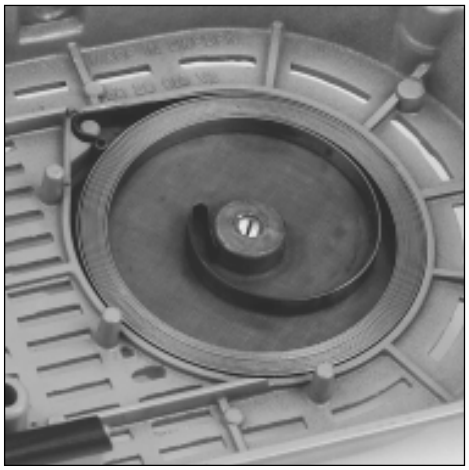


Remove the spring from the starter housing.

Remove the spring from the starter housing by knocking it against a bench with the spring facing downwards.



WARNING!
Wear protective glasses.



Assembly

Insert a new spring in the starter housing.

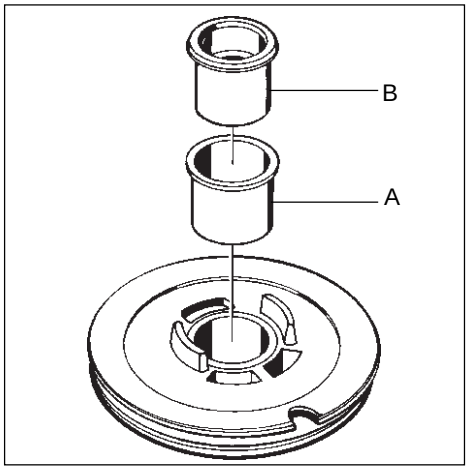
Assembly

Fit a new return spring if necessary.

Let the spring retainer ring remain in place.

1. Place the spring over its seating in the starter housing
2. Push the spring into its right position using your thumb and let the retainer ring slide off the spring.
3. Lubricate the spring with a few drops of oil.

NOTE!
Do not forget the Pertinax disc between the spring and the starter housing.



WARNING!
Wear protective glasses.

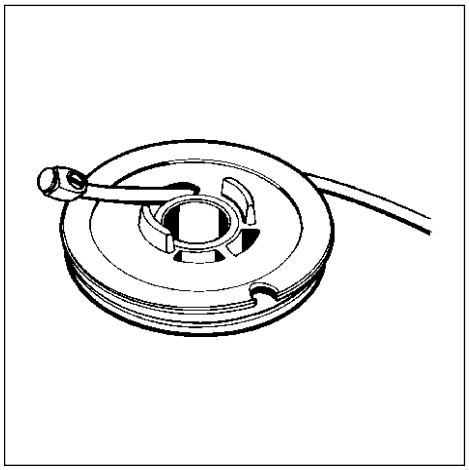
Check the starter pulley's bearing.

If necessary replace the sleeves (A) and (B).

Check the starter pulley's bearing. If it is heavily worn the bearing sleeve (A) can be replaced.

Cut out the sleeve and press in a new sleeve.

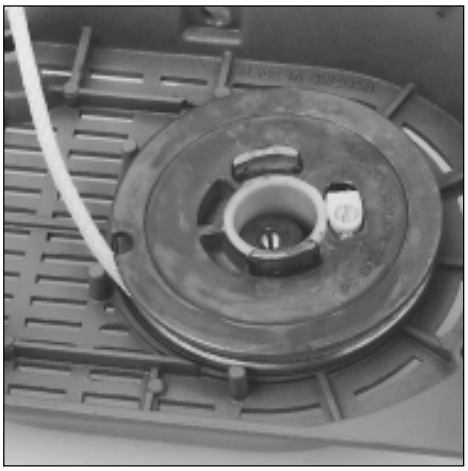
If there is still too much play on the bearing a new metal sleeve (B) should also be fitted.



If necessary replace the starter cord.

If necessary replace the starter cord.

Thread the new cord through the hole in the starter pulley as shown in the illustration and screw the plastic cube on the end of the cord. Let it protrude approx. 3 mm and melt it using a soldering iron to ensure a secure fastening is obtained.



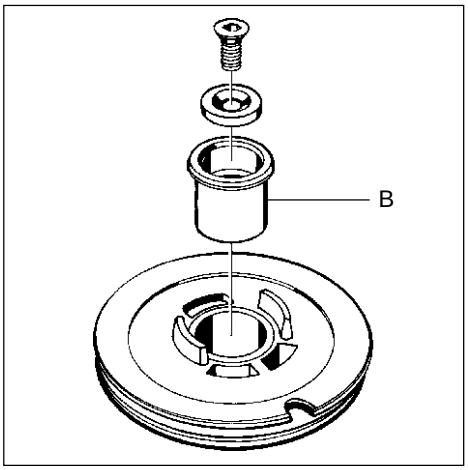
Wind the cord around the starter pulley about 3 turns **clockwise** and position the pulley in the starter housing.

Tip!

The knot on the starter cord in the handle can be difficult to undo. It is easier if you place the knot on a hard surface and hit it with a hammer.

Wind the cord around the starter pulley about 3 turns **clockwise** and position the pulley in the starter housing.

Check that the return spring grips the starter pulley hub correctly.

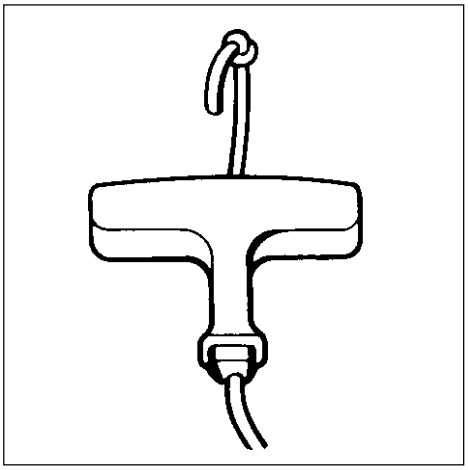


Fit the washer and screw that hold the starter pulley.

Lubricate the bearing sleeve (B) with a few drops of oil and insert the starter pulley.

Fit the washer and screw.

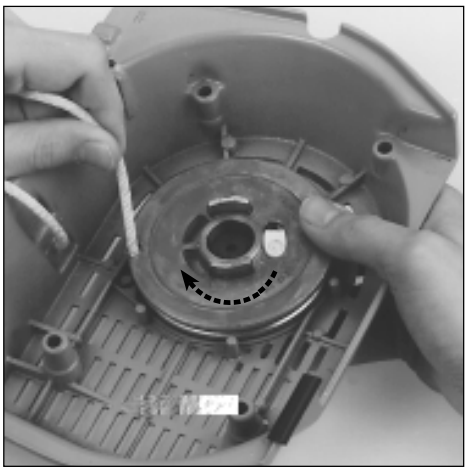
Use Loctite on the screw.



Fit the starter handle on the cord.

Insert the cord through the cord guide in the starter housing and anchor it in the starter handle by tying a knot.

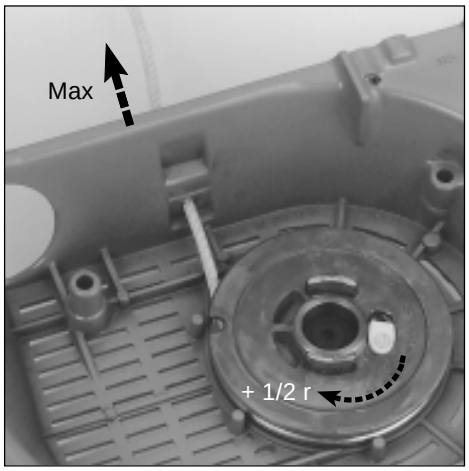
Fold down the free ends and pull the knot fully into the starter handle.



Tension the return spring.

To tension the return spring pull out the starter cord fully and lift it into the cut-out in the starter pulley.

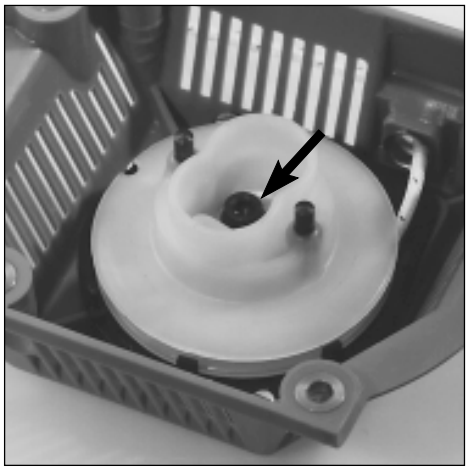
Hold the pulley using your thumb then tension the spring by turning the starter pulley **clockwise** approx. 2 turns.



Check the spring tension.

Check the spring tension.

It should be possible to turn the starter pulley **at least a further half turn** with the starter cord fully extended.



Model 250

Dismantling

Release the spring tension.

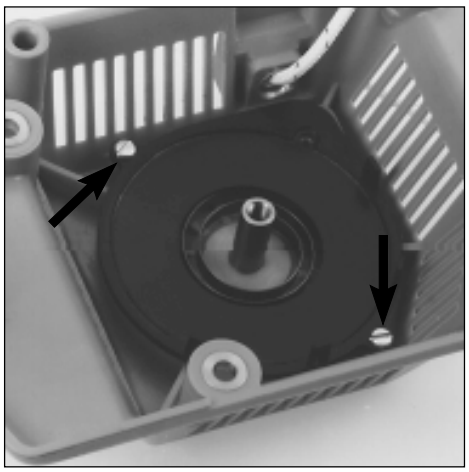
Remove the starter pulley.

Model 250

Dismantling

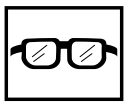
Release the spring tension in the same way as described for model 265.

Remove the screw in the centre of the starter pulley and lift out the pulley.

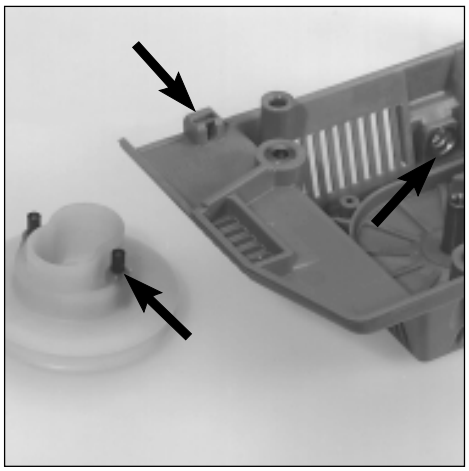


Carefully remove the spring cassette so that the spring does not fly out.

Remove the screws and lift out the spring cassette.



WARNING!
Wear protective glasses.



Check the starter pulley and starter housing for wear and damage.

Despite the spring sitting in a cassette it can still fly out when the cassette is pried from the guide pin when inserting the cord in the starter housing.

Check the following:

1. Wear on the drive pins on the starter pulley.

   If necessary replace the starter cord.
2. Nut in the nut pocket is in position and the thread is undamaged.
3. Cord entry in the starter housing. If worn the housing should be replaced.

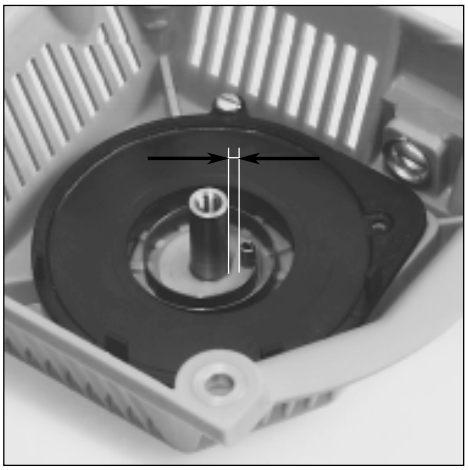
Assembly

Fit a new spring cassette if necessary.

Assembly

Lubricate the return spring with a few drops of oil or a cold resistant grease.

Ensure the spring has been pressed down to the bottom of the cassette especially at the fastening points.

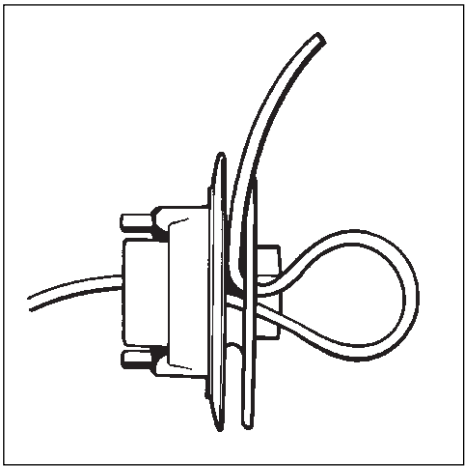


Fit the spring cassette in the starter housing.

Press the spring cassette into the starter housing and tighten the screws.

Check that the end of the spring is approx. 3 mm from the spindle to help assembly of the starter pulley.

Lubricate the surface of the cassette with oil or cold resistant grease.



Fit a new starter cord.

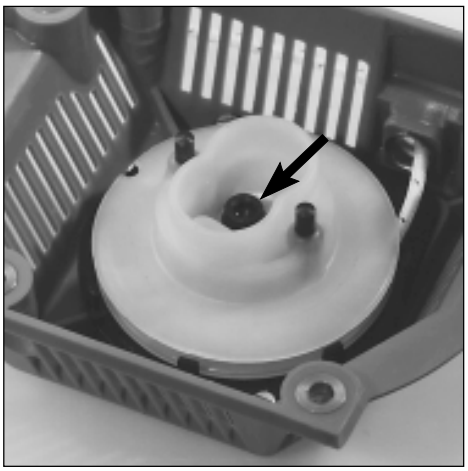
Fit a new starter cord.

Tie a small knot on the cord and melt the ends of the cord so that is does not fray.

Wind the cord approx. 3 turns **anticlockwise** on the starter pulley.

Tip!

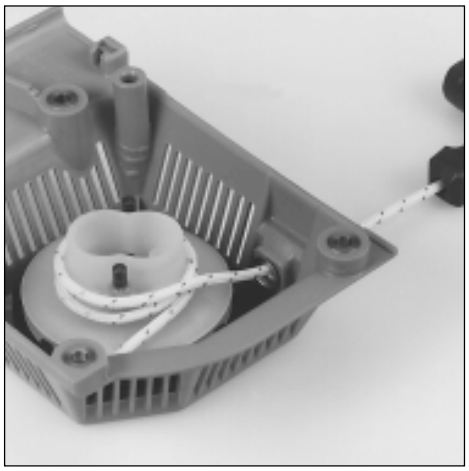
First thread the cord straight through the hole in the starter pulley and then back again and out through the slot.



Fit the starter pulley.

Lubricate the spindle in the starter housing with a few drops of oil and position the starter pulley and tighten the screw.

Fit the starter handle as described for model 265, but tie a double knot as the cord is lighter.

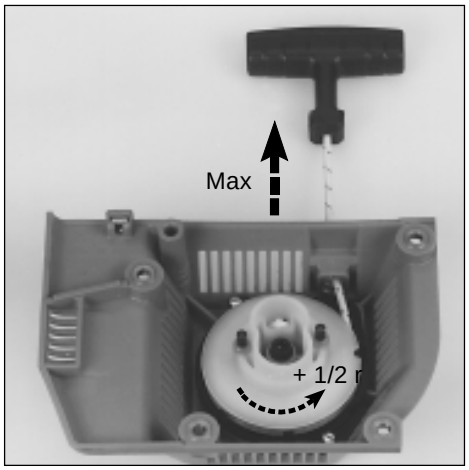


Tension the return spring.

To tension the return spring.

Wind the cord 2 turns **anticlockwise** around the hub on the starter pulley and pull out the starter handle until the cord is extended.

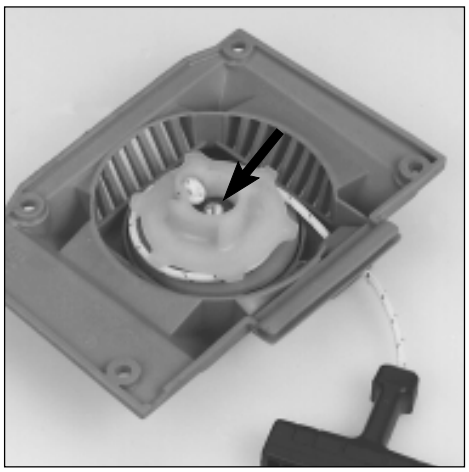
Repeat the procedure once more.



Check the spring tension.

NOTE!

With the starter cord fully extended it must still be possible to turn the starter pulley *at least a further half turn.*



Models 240/245

Dismantling

Release the spring.

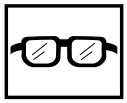
Remove the starter pulley.

Models 240/245

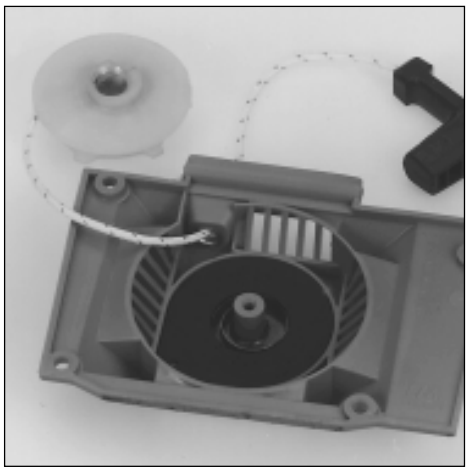
Dismantling

Release the spring tension as described for model 265.

Remove the screw and washer and lift out the starter pulley.

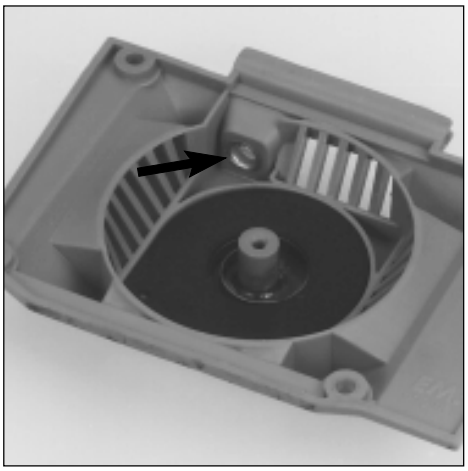


WARNING!
Wear protective glasses.



Lift out the spring cassette.

The spring cassette sits freely in the starter housing and can easily be lifted out to be replaced.



Assembly

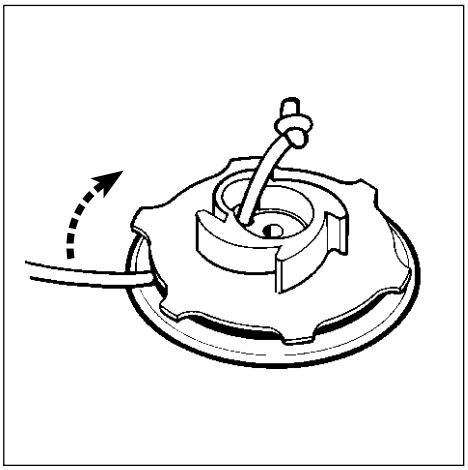
Check the starter housing for wear and damage.

Fit the spring cassette.

Assembly

Check the cord guide in the housing. If it is worn the starter housing must be replaced.

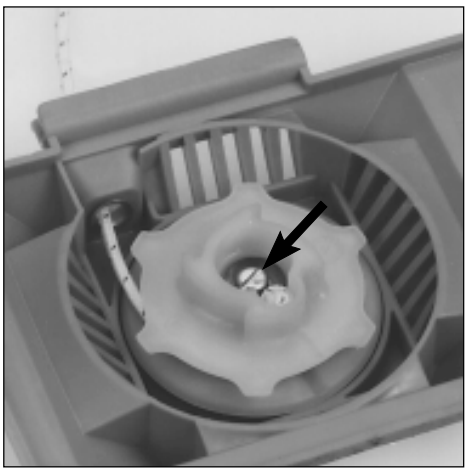
Lubricate the spring with a few drops of oil and position the spring cassette in the starter housing.



Anchor the starter cord in the starter pulley and wind it approx. 4 turns **clockwise** onto the pulley.

Tie a small knot on the cord and seal the ends by melting the cord ends, e.g. with a soldering iron.

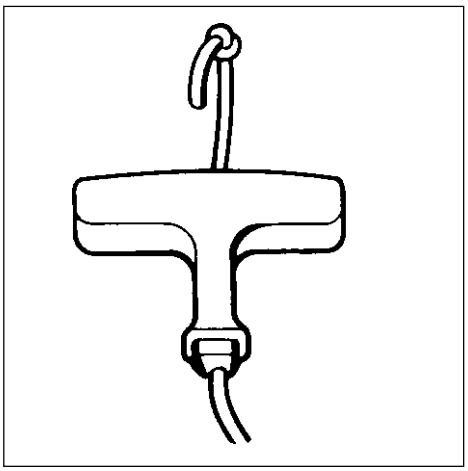
Anchor the starter cord in the starter pulley and wind it about 4 turns **clockwise** around the pulley.



Fit the starter pulley in the starter housing.

Lubricate the bearing spindle with a few drops of oil and fit the starter pulley in the starter housing.

Position the washer and tighten the screw.



Fit the starter handle on the cord.

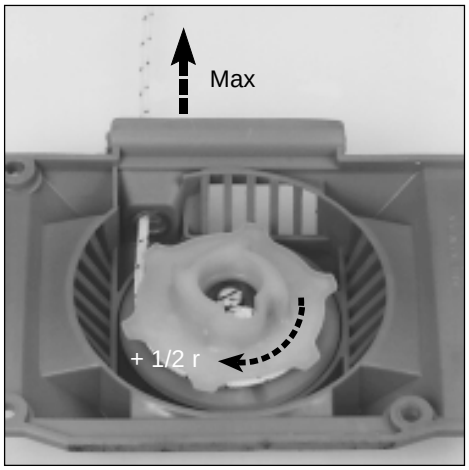
Fit the starter handle as described for model 265, but tie a double knot as the cord is lighter.

Tension the return spring.

To tension the return spring

Wind the cord 2 turns **clockwise** around the hub on the starter pulley and pull out the starter handle until the cord is fully extended.

Repeat the procedure once more, but only wind the cord 1 turn around the hub.

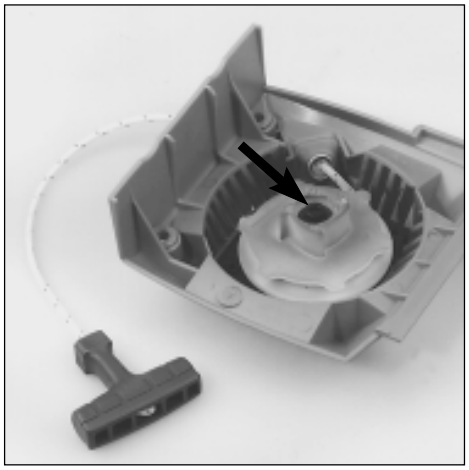


Check the spring tension.

Check the spring tension.

NOTE!

With the starter cord fully extended it must still be possible to turn the starter pulley **at least a further half turn.**



Models 225, 232, 235, 240

Dismantling

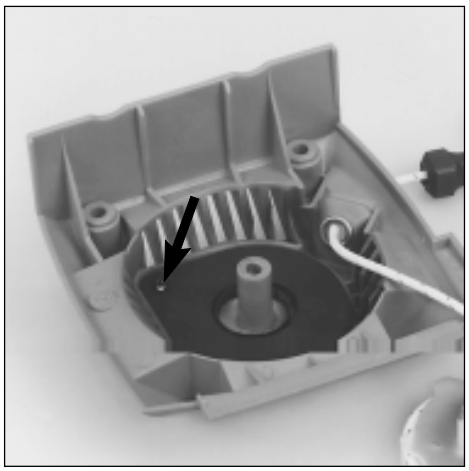
Release the spring tension and dismantle the starter pulley.

Models 225, 232, 235, 240

Dismantling

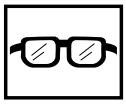
Release the spring tension as described for model 265.

Remove the screw and washer and lift out the starter pulley.

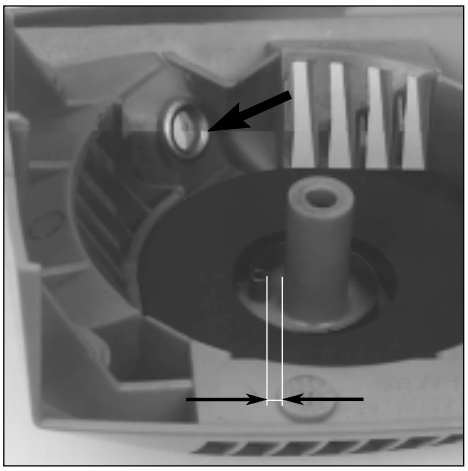


Remove the spring cassette.

Remove the screw and lift out the spring cassette from the starter housing.



WARNING!
Wear protective glasses.



Assembly

Check the starter housing for wear and damage.

Fit a new spring cassette if necessary.

Assembly

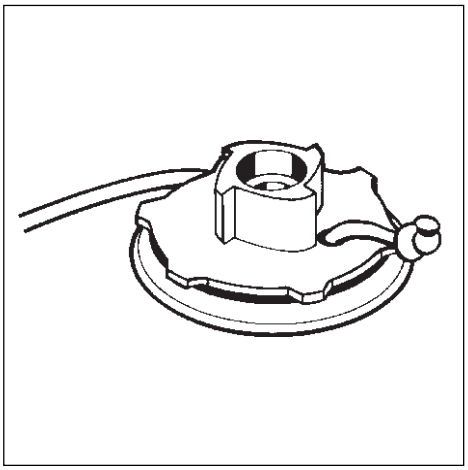
Check the cord entry.

If it is worn the starter housing must be replaced.

Lubricate the return spring with a few drops of oil and fit the cassette in the starter housing.

NOTE!

The end of the spring should be 3–4 mm from the spindle to help assembly of the starter pulley.



Fit a new starter cord.

Fit a new starter cord. Tie the smallest knot possible on the cord and melt the ends to stop it from fraying.

Wind the cord about 3 turns **anticlockwise** on the starter pulley.

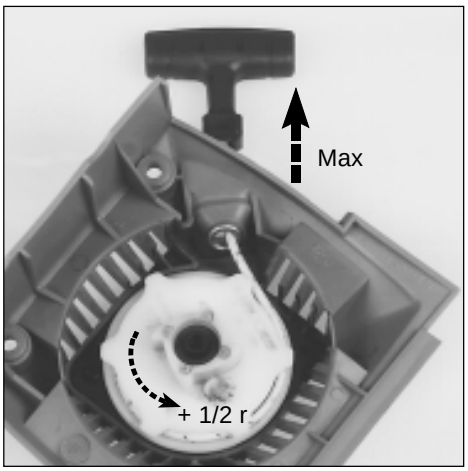
Position the starter pulley in the starter housing and fit the washer and screw.

Fit the starter handle.

Fit the starter handle as described for model 265.

Tension the return spring by winding the starter cord 2 turns **anticlockwise** around the hub on the starter pulley.

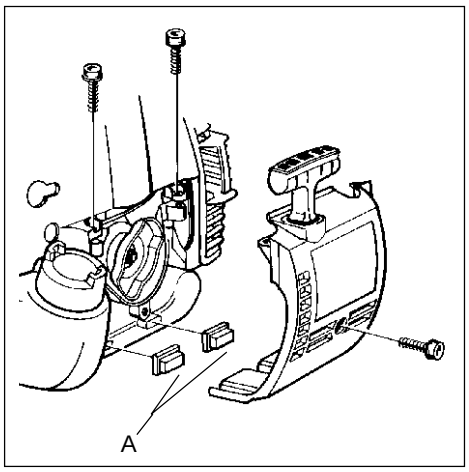
Repeat the procedure once more, but with the cord only wound once around the hub.



Check the spring tension.

NOTE!

With the starter cord fully extended it must still be possible to turn the starter pulley **at least a further half turn.**



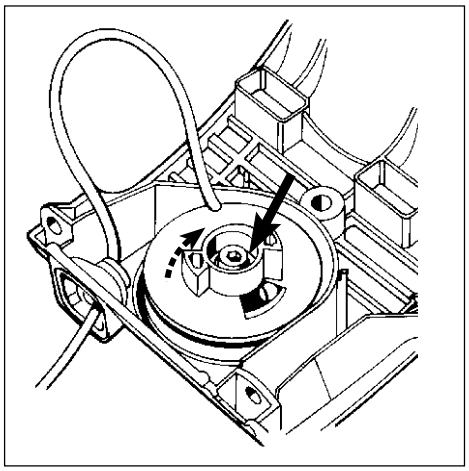
Models 322, 325

Dismantling

Remove the 3 bolts and lift off the starter.

NOTE!

Ensure the bushings (A) that guide the starter towards the fuel tank are not lost.



Offload the spring tension.

Remove the screw from the centre of the starter pulley and lift off the starter pulley.

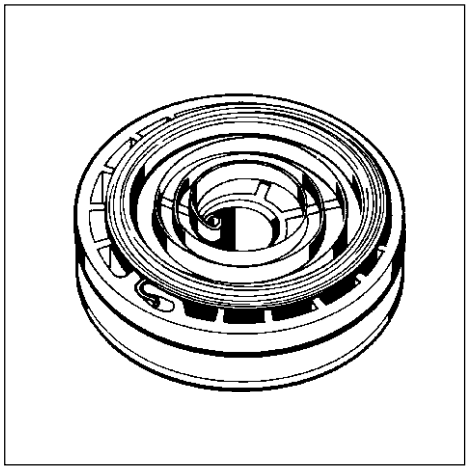
Offload the spring tension in the same way as described for model 265.

Remove the screw in the centre of the starter pulley. Carefully lift out the starter pulley from the starter housing.

WARNING!

Wear protective glasses.

The return spring lies tensioned in the starter and can fly out and cause personal injury with careless handling.



Assembly

Clean the component parts and assemble in the reverse order as set out for dismantling.

Assembly

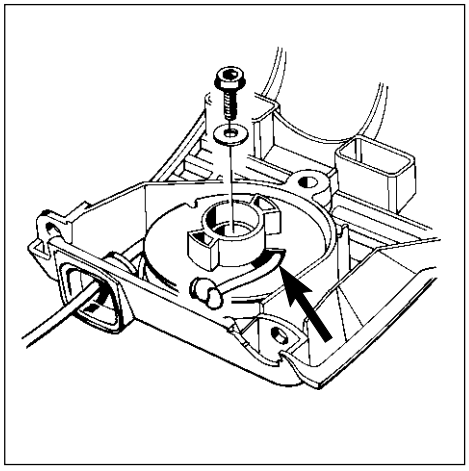
Clean component parts before assembly.

Replace the return spring/starter pulley and starter cord, if necessary.

NOTE!

The return spring and starter pulley are supplied pre-assembled and are fitted in the starter housing as a single unit.

Exercise care when opening the packaging so that the spring does not fly out.



Assemble the starter pulley.

Assemble a new starter cord.

NOTE!

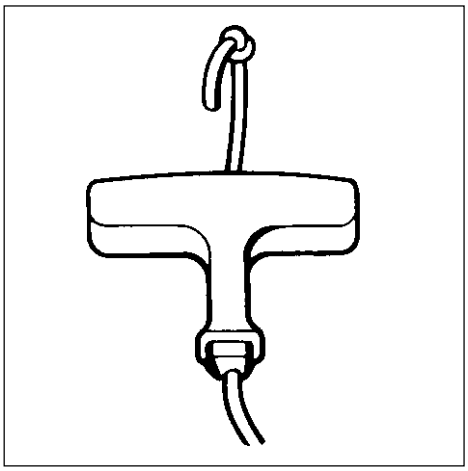
A new starter cord can be fitted without the need of dismantling the starter!

Lubricate the spindle with a little grease and fit the starter pulley.

Position the washer and tighten the screw.

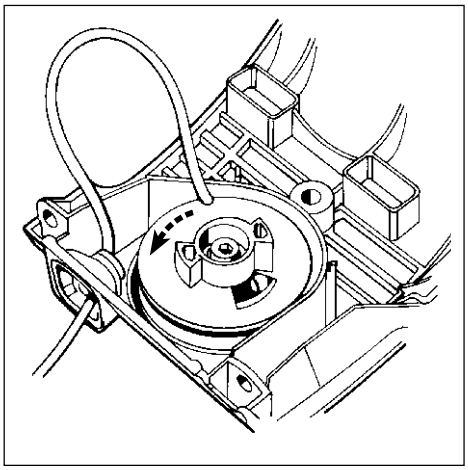
Assemble a new starter cord. Slid it into the starter pulley's slot as illustrated and then out through the cord guide in the starter housing.

Make sure the knot on the end of the cord is as small as possible!



Assembling the starter handle.

Assemble the starter handle in the same way as described for model 265, but tie a double knot as the cord is lighter.



Tension the return spring

Check the spring tension.

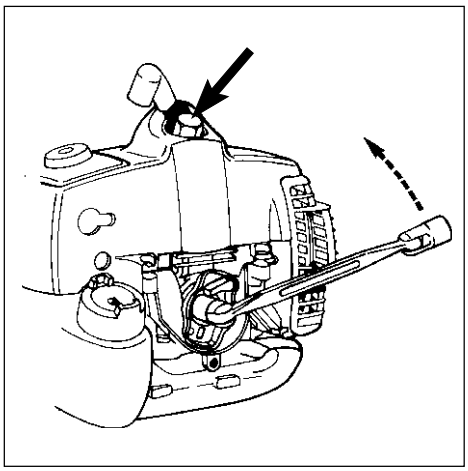
Fit the starter on the engine body.

Do not forget the guide sleeves for the fuel tank.

Tension the return spring. Pull out the starter cord fully and lift it out of the cut-out in the starter pulley.

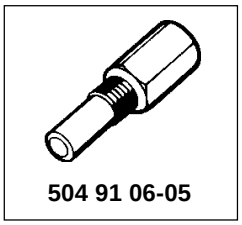
Now turn the starter pulley **anticlock-wise,** 6 turns.

Check the spring tension. With the starter cord fully extended it should still be possible to turn the starter pulley further, *at least a half turn.*



Replacing the drive dogs

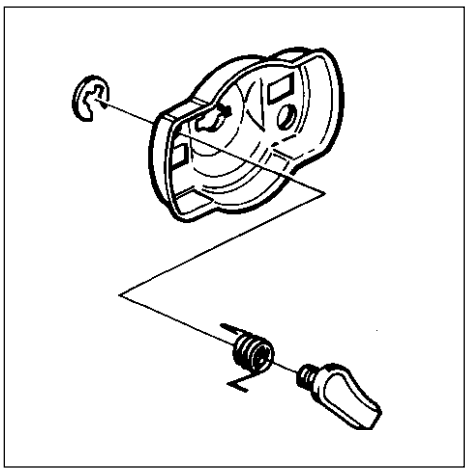
Dismantle the drive body.



504 91 06-05

Replacing the drive dogs

Fit the piston stop no 504 91 06-05 in the spark plug hole and loosen the nuts holding the drive body.

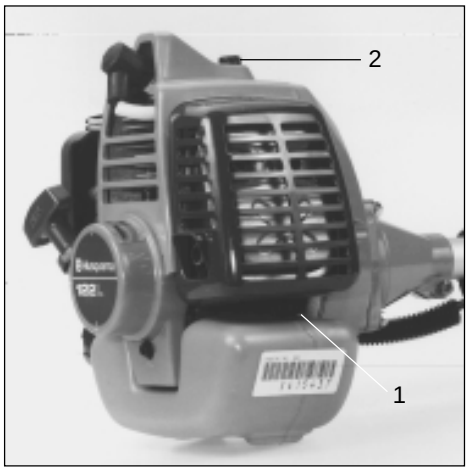


Remove the circlip and replace any damaged drive dogs or springs, if necessary.

Remove the circlip holding the drive dog.

Lift out the drive dog and spring for replacement.

Assemble in the reverse order as set out for dismantling.



Model 122

Dismantling

Remove the covers from the muffler and cylinder.

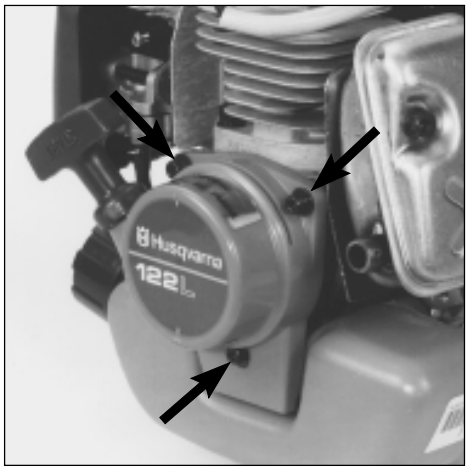
Model 122

Dismantling

You must first remove the covers over the muffler and cylinder to be able to dismantle the starter.

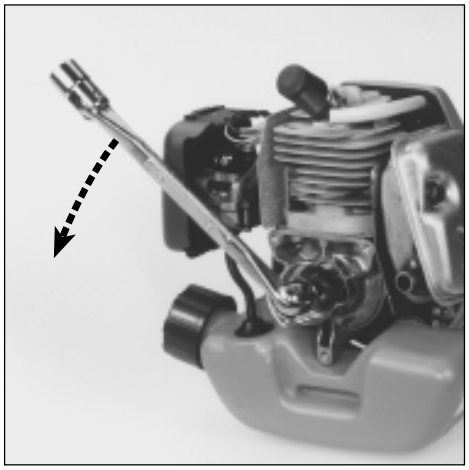
Remove the screw (1), pull out the lower edge of the cover and lift it off.

Remove the screw (2) and lift off the cylinder cover.



Dismantle the starter from the engine body.

Remove the screws and lift off the starter from the engine body.



Remove the starter hub from the crankshaft.

Unscrew the hub from the crankshaft.

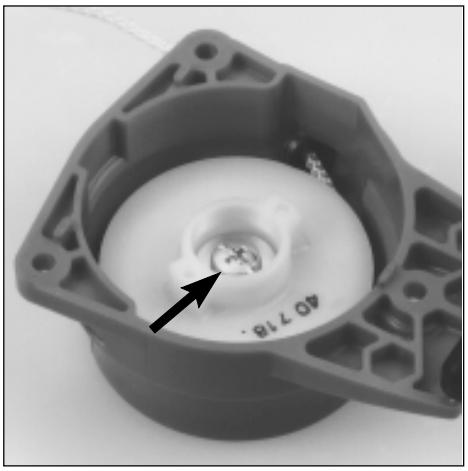
Use a hammer and punch to loosen the hub if necessary.

NOTE!
The nut is brazed on the drive.

Replace the drive dog if it is damaged or worn.

The drive dog and its spring can easily be replaced if damaged or worn.

Squeeze together the drive dog's axle stud with pliers when dismantling.

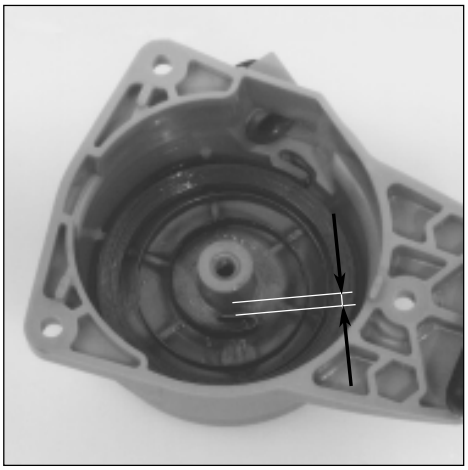


Release the spring tension and dismantle starter pulley.

Release the spring tension as described for model 265.

Remove the screw and washer and carefully lift out the starter pulley so that the return spring does not fly out.

WARNING!
Wear protective glasses.



Assembly

Fit a new return spring in the starter unit.

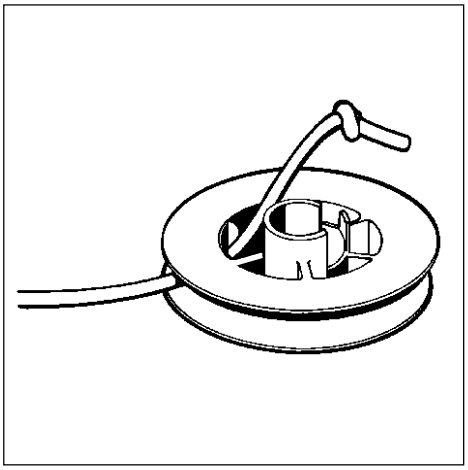
Assembly

Fit a new return spring in the starter unit.

Press the spring down correctly on the fastener and lubricate with a few drops of oil or cold resistant grease.

Ensure the ends of the spring are 2-3 mm from the spindle.

WARNING!
Wear protective glasses.



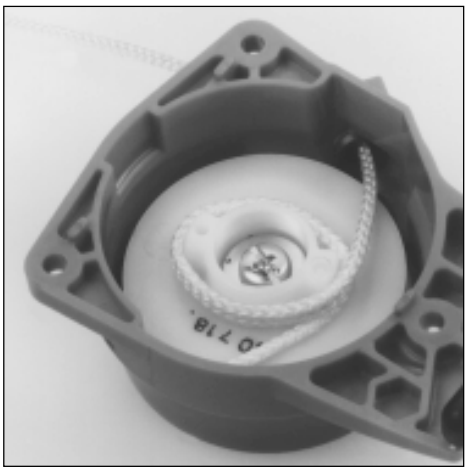
Fit a new starter cord and position the starter pulley in the starter housing.

Fit a new starter cord. Tie the smallest knot possible on the cord but leave free an end of approx. 10 mm.

Press the free end into the cut-out in the pulley hub reinforcement.

Wind the cord about 4 turns **clockwise** (seen from the rear) on to starter pulley.

Position the starter pulley in the starter housing and fit the washer and screw.



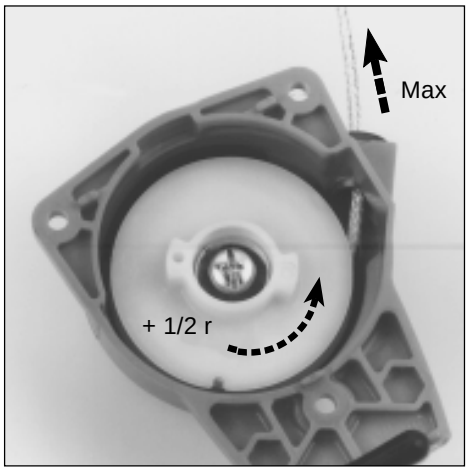
Fit the starter handle.

Tension the return spring.

Fit the starter handle as described for model 265, but tie a double knot on the cord.

Lift up the starter cord from the cut-out and wind it 2 turns ***anticlockwise*** around the hub on the starter pulley. Pull out the starter handle until the cord is fully extended.

Repeat the procedure once again.

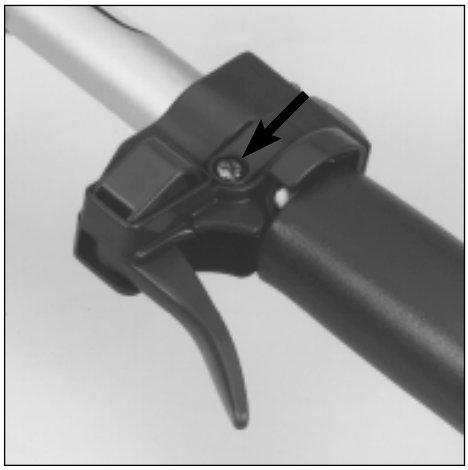


Check the spring tension.

NOTE!

With the starter cord fully extended it must still be possible to turn the starter pulley **at least a further half turn.**

Fit the hub, starter and covers in the reverse order set out for dismantling.



Models 32, Mondo, Mondo Mega

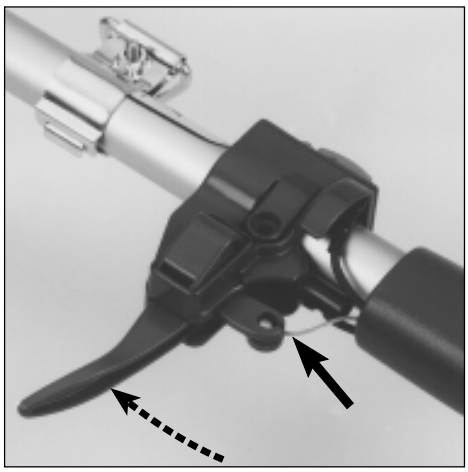
Dismantling

Remove the screws that hold the throttle trigger.

Models 32, Mondo, Mondo Mega

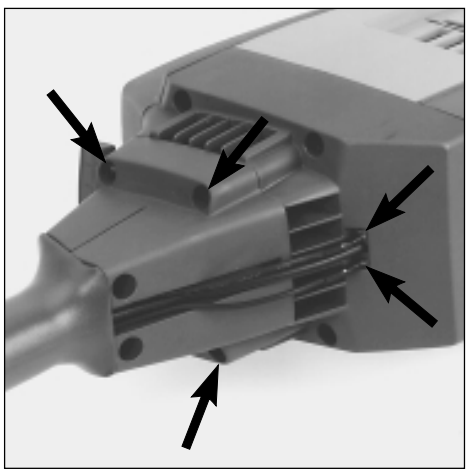
Dismantling

Remove the screws that hold the throttle trigger and slide it along the shaft as far as the throttle cable and electrical cables will allow.



Lift out the throttle cable.

Move the throttle trigger forward and lift the throttle cable out of the trigger.

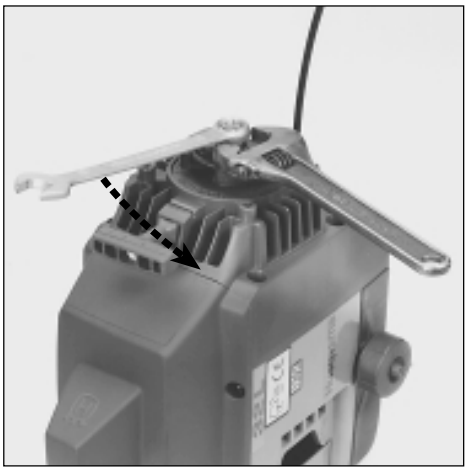


Disconnect the electrical cables.

Remove the shaft complete with handles.

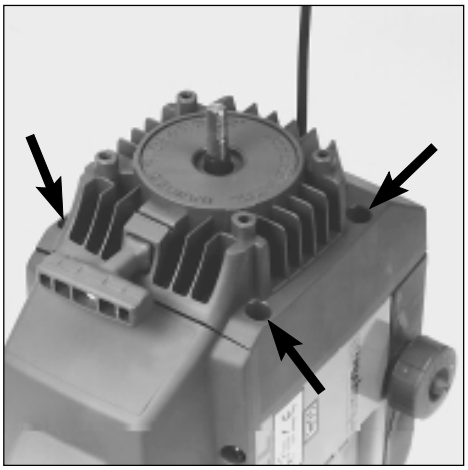
Disconnect the electrical cables by the engine body and remove the 4 screws (models Mondo and Mondo Mega have 3 screws) that hold the shaft and handle on the starter housing.

Lift off the shaft.



Dismantle the centrifugal clutch.

Undo the nuts holding the centrifugal clutch and lift off the clutch and the large washer.



Dismantle the starter.

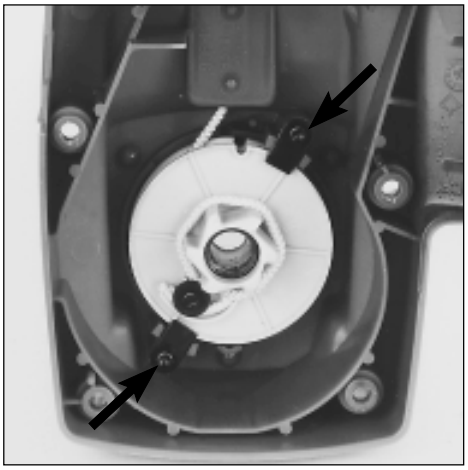
Remove the 4 screws and lift off the starter.

Model 32

Pull out the electrical cables from the starter housing using flat nose pliers.

Model Mondo

Also dismantle the screw by the spark plug.



Remove the two locking plates that hold the starter pulley axially.

Remove the two locking plates that hold the starter pulley axially.

Release the spring tension.

Release the spring tension.

Pull out the starter cord about 30 cm and place the cord in the cut-out on the edge of the starter pulley.

Let the starter pulley slowly rotate backwards.

Lift off the starter pulley.

Let the starter pulley slowly rotate backwards (anticlockwise) and then lift off the pulley.

NOTE!
Stop the rotation using your thumb.

WARNING!
Take care so that your thumb is not injured by the cord's fastening screw.

Remove the return spring from the starter housing.

Exercise great care when removing the starter spring.

The spring is tensioned inside a sheet cassette, nevertheless it can still easily fly out when dismantled.

WARNING!
Wear protective glasses.

Assembly

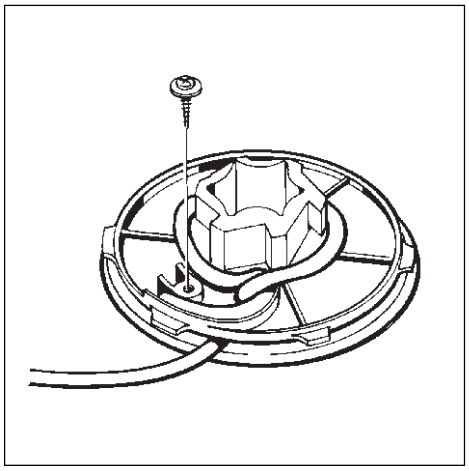
Insert a new spring cassette in position in the starter housing.

Assembly

Lubricate the return spring with a few drops of oil and position the new spring cassette in the starter housing.

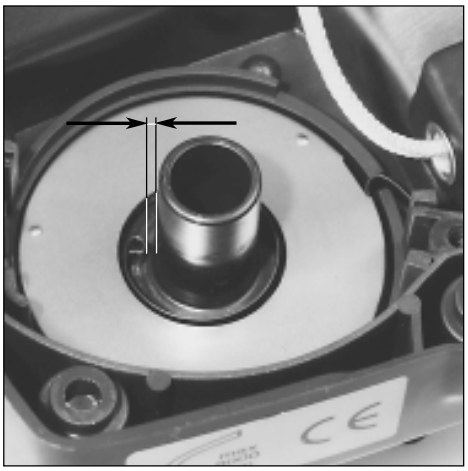
If the spring, despite your being careful, has flown out reposition it again in the cassette with the end turned as shown in the picture.

WARNING!
Wear protective glasses.



Replace the starter cord and attach it as shown in the diagram.

Attach the new starter cord to the starter pulley and wind it about 3 turns **clockwise** around the pulley.



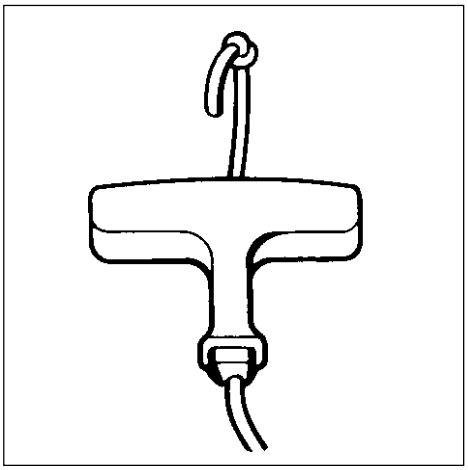
Fit the starter pulley.

Lubricate the pulley spindle with a few drops of oil.

Ensure the end of the spring is about 2–3 mm from the spindle and position the starter pulley.

NOTE!

Do *not* tighten the locking plates that hold the starter pulley axially.



Fit the starter handle.

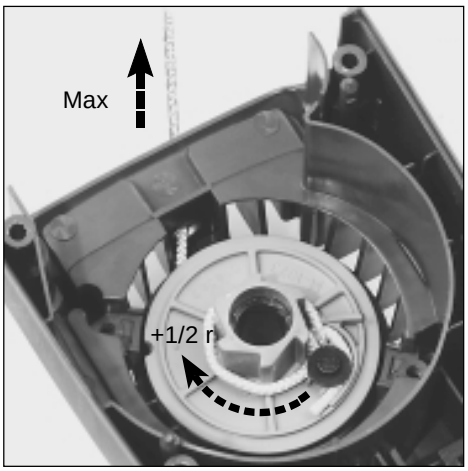
Fit the starter handle as described for model 265.

Tie a double knot as the cord is lighter than on model 265.

Tension the return spring.

Tension the return spring.

- Pull out the cord approx. 30 cm and stop the starter pulley with your thumb.
- Lift the cord up from one of the cut-outs on the starter pulley.
- Wind the cord 2 turns **clockwise** around the hub on the starter pulley.
- Pull out the starter cord fully.



Repeat the spring tensioning and fit the locking plates.

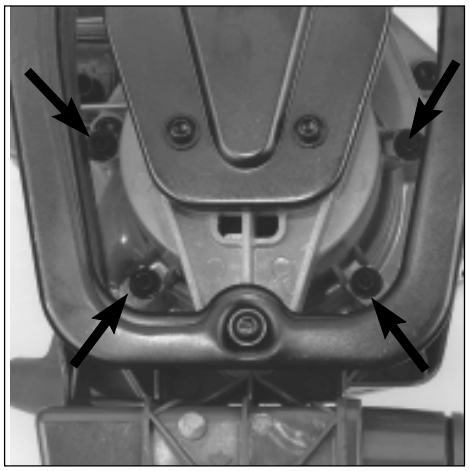
Repeat the spring tensioning once more.

Ensure the starter pulley can still be turned **at least a further half turn** with the cord fully extended.

Tighten the locking plates that hold the starter pulley axially.

NOTE!

Model 32 has a thin spacer under the plates.



Model 18H

Dismantling

Dismantle the air filter, throttle cable and carburettor.

Remove the 4 screws holding the engine body and gear housing.

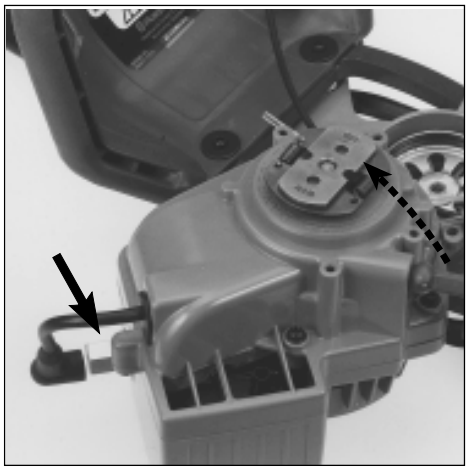
Model 18H

Dismantling

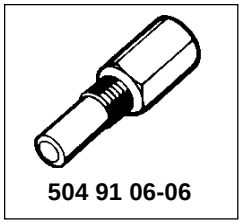
The starter is positioned between the crankcase and the cutting equipment drive.

First dismantle the spark plug, air filter, throttle cable and carburettor.

Turn the mower upside down so that the screws holding the engine body are accessible. Remove the 4 screws.



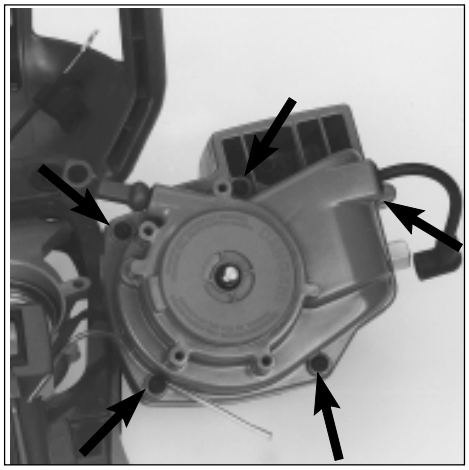
Dismantle the centrifugal clutch.



504 91 06-06

Assemble the piston stop no. 504 91 06-05 in the cylinder.

Unscrew the centrifugal clutch. First loosen it using a hammer and punch, **anticlockwise.**



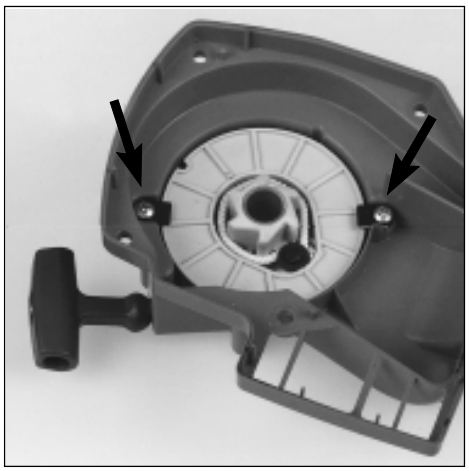
Dismantle the starter from the engine.

Dismantle the starter.

Remove the 5 screws holding the starter housing

Lubricate the ignition cable with a few drops of oil and remove the rubber grommet in the cover.

Lift off the starter housing.

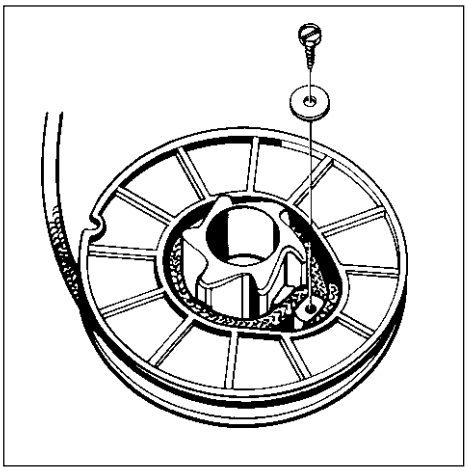


The following procedures are the same as for models 32, Mondo:

Remove the locking plates holding the starter pulley axially.

Offload the spring tension.

Dismantle the starter pulley and spring cassette from the starter housing.



Assembly (also see model Mondo)

Place a new spring cassette in position in the starter housing.

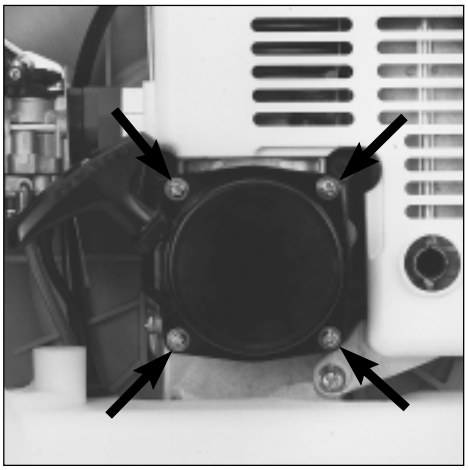
Replace the cord and attach as illustrated.

Assemble the starter pulley.

Assemble the starter handle (see model 265).

Tension the return spring.

Repeat tensioning the spring and fit the locking plates.



Models 140B, 141B

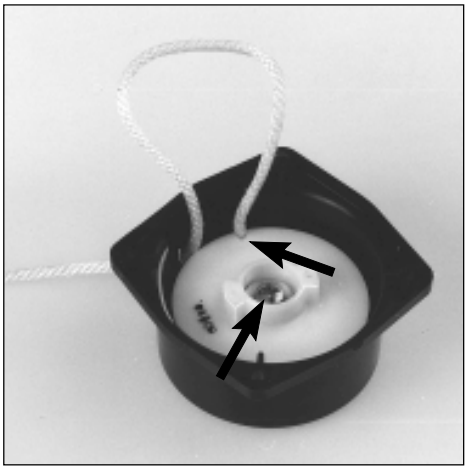
Dismantling

Remove the screws and lift off the starter.

Models 140B, 141B

Dismantling

Remove the 4 screws holding the starter against the engine body.



Offload the spring tension and remove the starter pulley from the starter housing.

Lift the starter cord out of the cut-out in the starter pulley.

Offload the spring tension by allowing the starter pulley to rotate backwards. Stop the pulley using your thumb.

Remove the screw and washer from the centre of the starter pulley.

Lift off the starter pulley.

Dismantle the return spring.

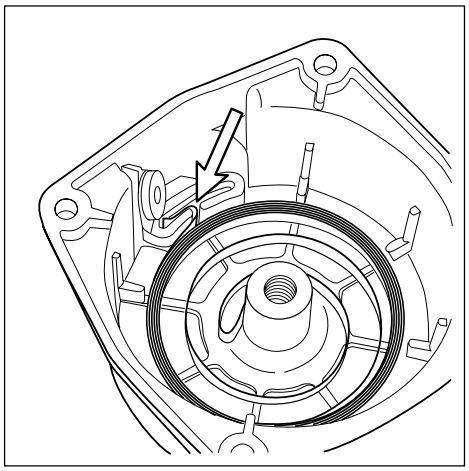
Clean and replace any damaged parts.

Carefully lift off the starter pulley and return spring.

WARNING!
Wear protective glasses.

The return spring lies tensioned in the starter housing and can fly out and cause personal injury with careless handling.

Clean and replace any damaged parts.



Assembly

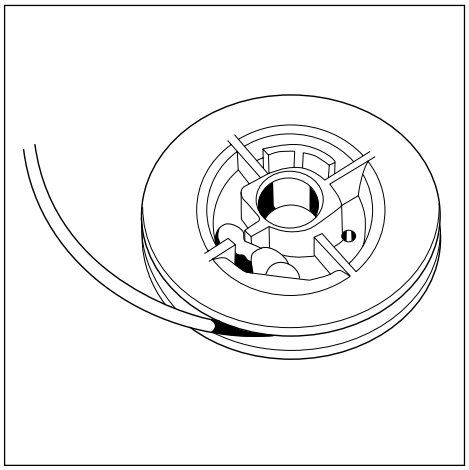
Fit a new return spring in the starter housing.

Assembly

Fit a new return spring in the starter housing. Exercise great care so that it does not fly out.

WARNING!
Wear protective glasses.

Check that the spring's mounting is facing the right way!



Replace the starter cord and attach as illustrated.

Wind the cord 4 turns clockwise around the starter pulley.

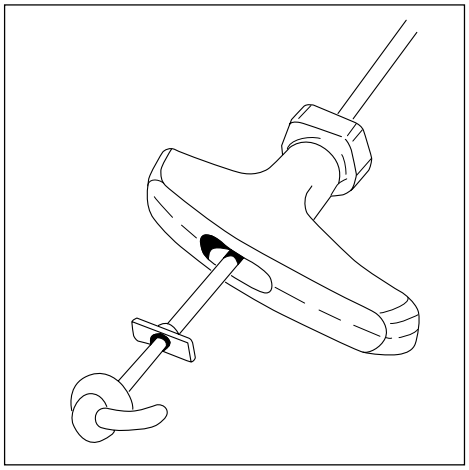
Lubricate the spindle and return spring and assemble the starter pulley.

Attach a new starter cord in the starter pulley as illustrated.

Wind the cord 4 turns **clockwise** around the starter pulley.

Lubricate the spindle and return spring with a few drops of oil.

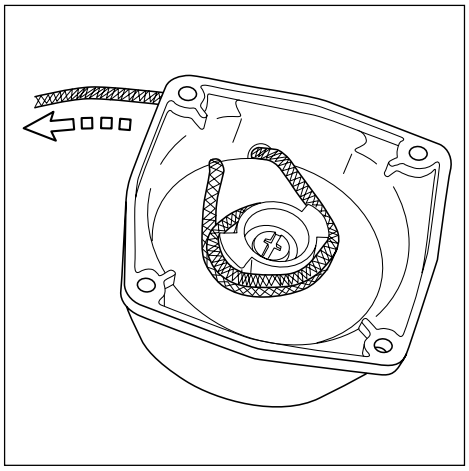
Place the starter pulley in position and tighten the screw in the centre. Do not forget the washer.



Assemble the starter handle.

Assemble the starter handle.

The collar on the washer should face towards the starter handle.

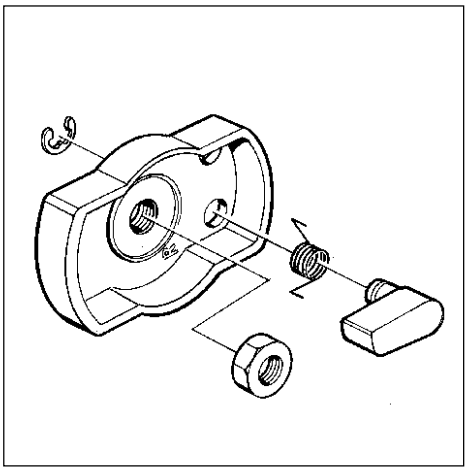


Tension the return spring.

Check that the pulley can be turned a further half turn with the starter cord fully extended!

Tension the return spring.

- Pull out the cord approx. 30 cm and stop the starter pulley using your thumb.
- Lift the starter cord up in the cut-out in the starter pulley.
- Wind the cord 2 turns **anticlockwise** around the hub on the starter pulley.
- Pull out the starter cord fully.



Models 140B, 141B

Drive dogs

Dismantle the drive from the crankshaft.

Replace the drive dogs if they are damaged or worn.

Models 140B, 141B

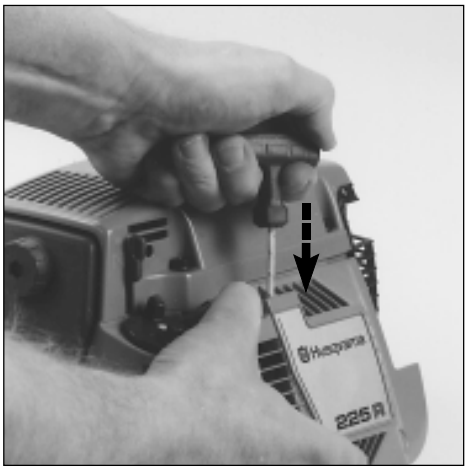
Drive dogs

Dismantle the drive dog from the crankshaft.

Unscrew the nut (anticlockwise) and then unscrew the drive in the same direction.

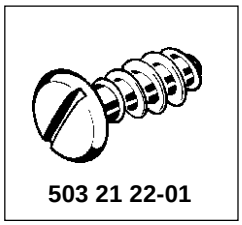
Replace the drive dogs if they are damaged or worn.

Fit the new dog in the hole marked “R”.



Assembly, general

Assemble the starter following the reverse order set out for dismantling.



503 21 22-01

Assembly, general

Assemble the starter.

Pull out the starter cord a little. Position the starter. Release the starter cord and ensure that the drive dogs grip in the starter pulley.

Tighten the screws.

NOTE!
If the plastic threads in the crankcase have, for some reason, been damaged it is recommended to use an over dimensioned screw (no 503 21 22-01).

Replacing the drive dogs

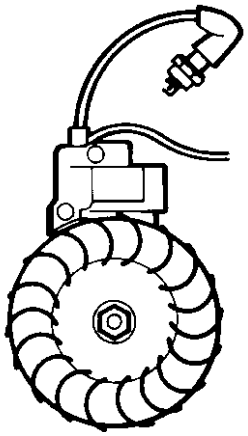
See chapter 2. “Ignition system, flywheel” with regard to engines that have the drive dogs fitted on the flywheel.

Replacing the drive dogs

See chapter 2. “Ignition system, flywheel” with regard to engines that have the drive dogs fitted on the flywheel.

Ignition system

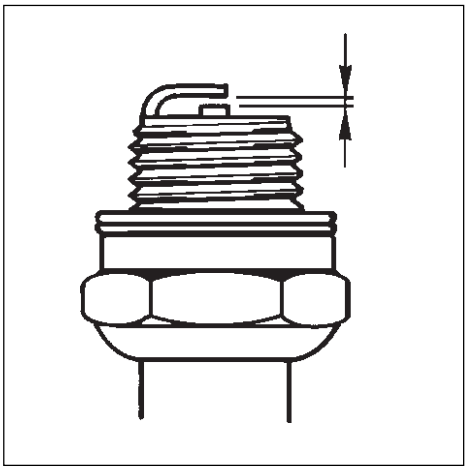
2.



Contents

The engine is equipped with an electronic ignition system with no moving parts. Consequently, a faulty component cannot be repaired, but must be replaced with a new one.

The ignition spark in an electronic ignition system has a very short burn time and can be judged to be weak and is at times difficult to see when trouble shooting.



Checking the spark

All models

Clean the electrodes and check the electrode gap.

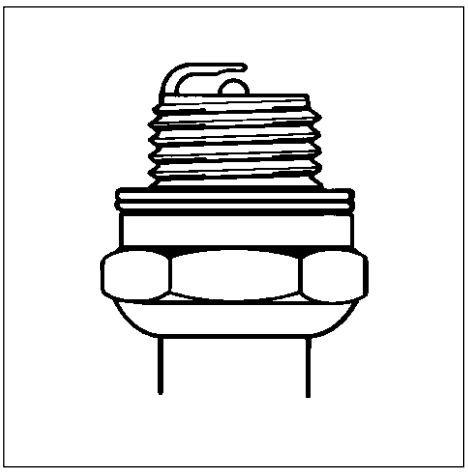
Checking the spark

All models

Remove the spark plug and clean off any carbon deposits using a wire brush.

Check the electrode gap, it should be 0.5 mm.

Adjust the gap to the correct size using the side electrode.

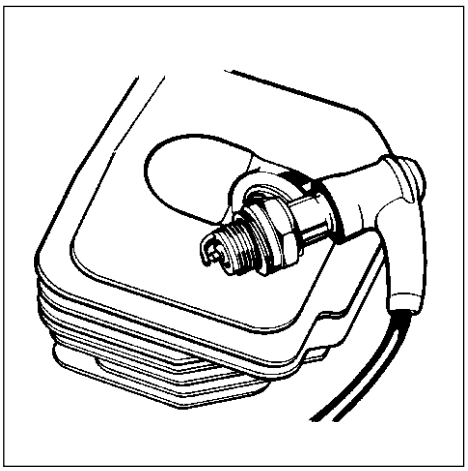


If the electrodes are worn by more than 50% the spark plug should be replaced.

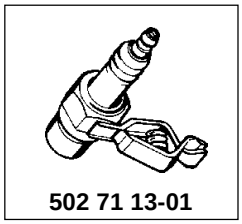
If the electrodes are worn by more than 50% the spark plug should be replaced.

An excessive spark gap can overload the ignition module and risk short circuiting.

Ensure the stop switch is in the 'start' position.



Check whether there is a spark when attempting to start, if not test using spark plug no. 502 71 13-01.



502 71 13-01

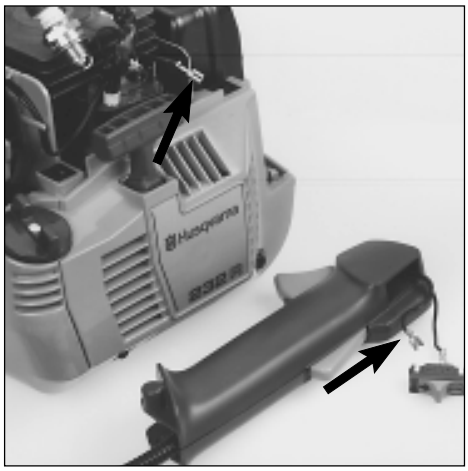
Earth the spark plug against the cylinder and pull the starter handle sharply.

There should now be a spark between the electrodes.

If there is no spark try using the test spark plug no. 502 71 13-01.

If there is spark now the spark plug is faulty.

Fit a new spark plug.



Fit a new spark plug.

If there is no spark disconnect the stop switch.

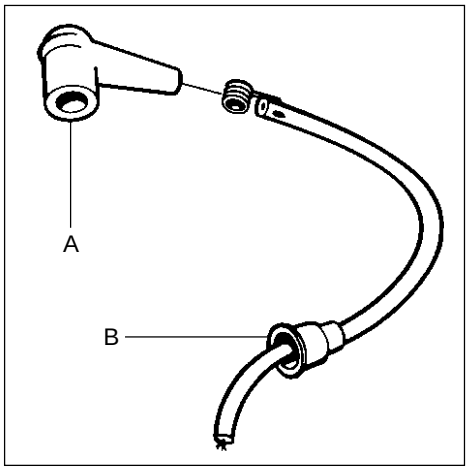
Replace the switch if necessary.

Fit a new spark plug.

If the procedure does not produce a spark remove the short circuit cable from either the ignition module or the stop switch.

If there is now a spark the stop switch is faulty.

Replace the switch.

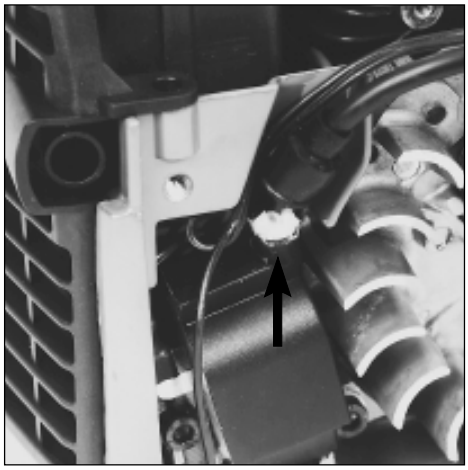


Check the ignition lead's connections.

Still no spark?

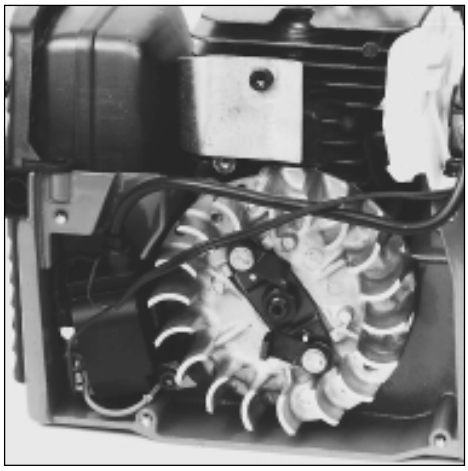
Check the spark plug connections.

Pull back the rubber covers by the spark plug (A) and the ignition module (B) and check that the ignition cable is not damaged. Cut off a piece of the cable to give a good connection if required.



Lubricate the cable ends with grease.

Lubricate the cable ends with a little grease to facilitate assembly and to prevent dampness from entering the connections.



Check other cables and connections.

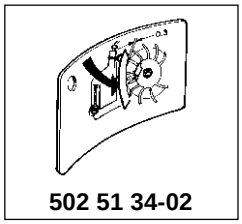
Still no spark?

Check other cables and connections for bad contact (dirt corrosion, cable breaks and damaged insulation).

Tip!

Use an ohmmeter to check whether there is a broken cable caused by crushing, for example.

Check the air gap.



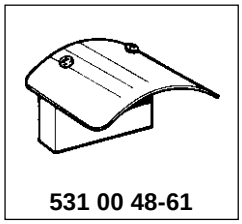
502 51 34-02

Still no spark?

Check the air gap between the flywheel's magnet and the ignition module. The gap should be 0.3 mm.

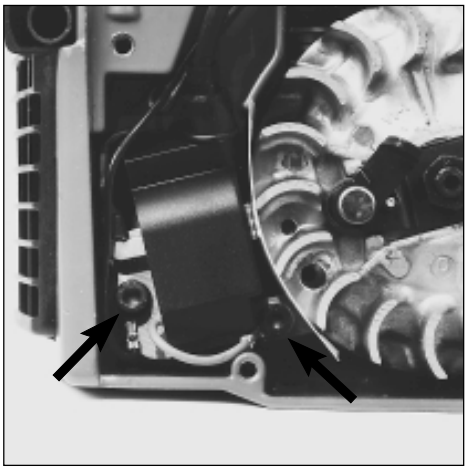
Use air gap gauge 502 51 34-02.

Model 122 should have a 0.38 mm gap. Use air gap gauge 531 00 48-61



531 00 48-61

Model 122

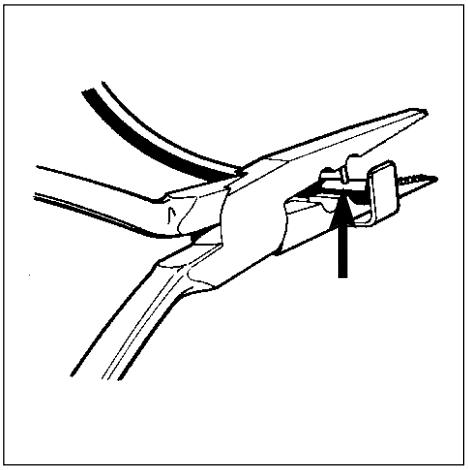


Adjust the air gap.

Adjust the air gap to the right measurement.

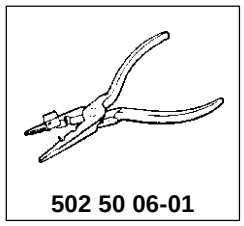
- Loosen the screws.
- Insert the gauge and press the ignition module against the flywheel.
- Tighten the screws and check the air gap once again.

If there is still no spark the ignition system should be replaced.



Changing the spark plug cover

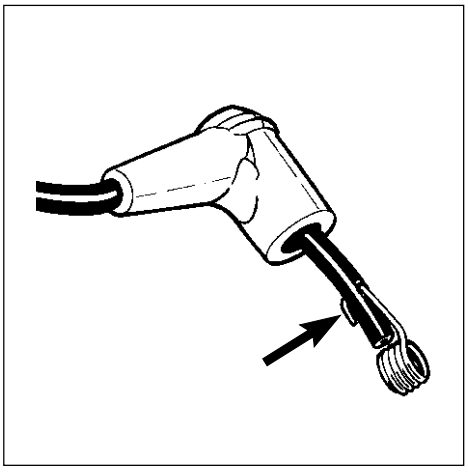
1. Push the ignition cable through the spark plug cover.
2. Make a hole in the ignition cable for the contact spiral.



502 50 06-01

Changing the spark plug cover

1. Lubricate the ignition cable using a little grease and push it through the spark plug cover.
2. Cut off a piece of the ignition cable (about 5 mm) and make a hole in the cable for the contact spiral using the pliers no. 502 50 06-01.

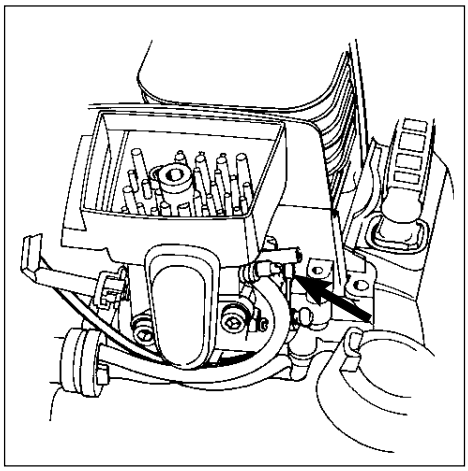


3. Fit the contact spiral on the ignition cable.

3. Fit the contact spiral on the ignition cable, taking care to form the wire along the cable.
4. Pull the contact spiral into the spark plug cover.

NOTE!

It is important that the point of the contact spiral is positioned so that it's unable to pierce the spark plug cover.



Dismantling

General

Remove all components necessary to gain access to the flywheel and ignition module.

Models 322, 325

Dismantle the guard over the muffler.

Disconnect the throttle cable and remove the screws holding the clutch cover.

Dismantling

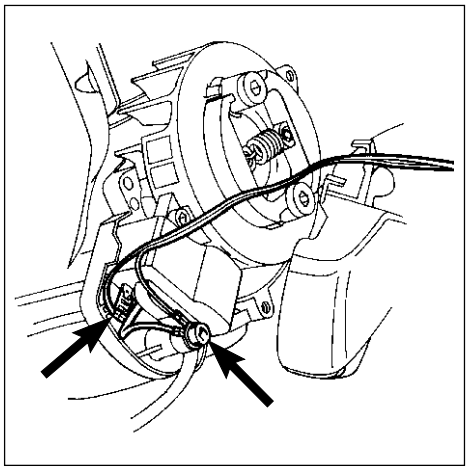
General

Dismantle the cylinder cover, spark plug, starter and air guide rail.

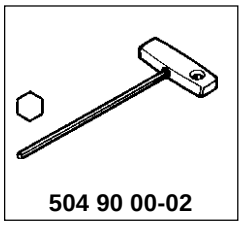
Models 322, 325

In addition to the components mentioned above, you also need to dismantle the guard over the muffler.

Disconnect the throttle cable from the carburettor.



Remove the clutch cover and loosen the short-circuit cable from the ignition module.

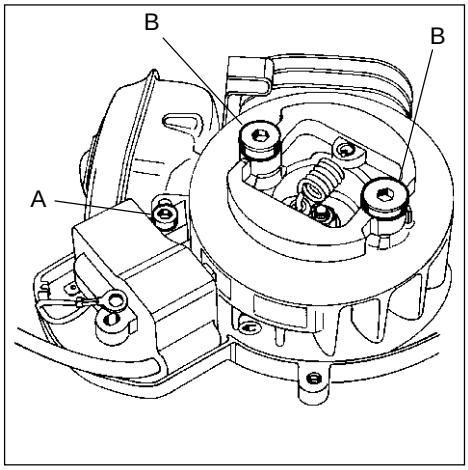


504 90 00-02

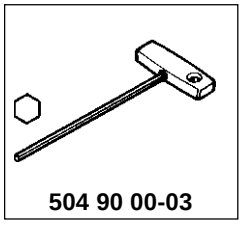
Remove the three screws holding the clutch cover.

Remove the clutch cover complete with the shaft from the engine.

Loosen both ends of the short-circuit cable from the ignition module.



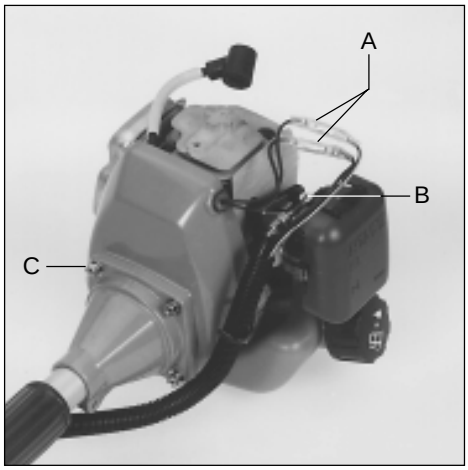
Dismantle the ignition module and the centrifugal clutch.



504 90 00-03

Remove the remaining screws (A) holding the ignition module and both screws (B) that hold the centrifugal clutch.

Lift off the clutch and ignition module.



Model 122

Pull apart the connectors (A).

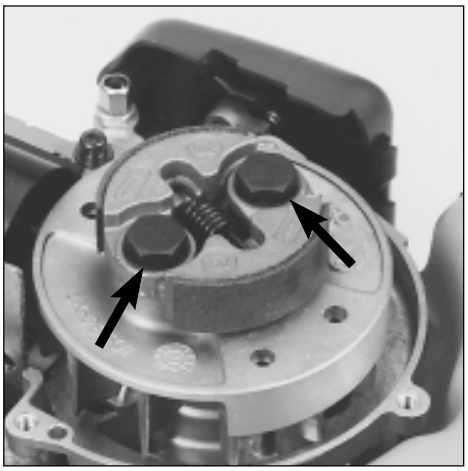
Remove the throttle cable at (B).

Remove the screws (C) and lift off the shaft.

Model 122

Pull apart the connector on the electrical cables (A) and remove the throttle cable from the carburettor lever (B).

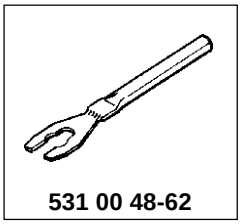
Remove the screws (C) and lift off the shaft.



Models 32, Mondo

Remove the starter.

Dismantle the fan cover and the centrifugal clutch.



531 00 48-62

Models 32, Mondo

Remove the starter. See chap. 1 “Starter.”

Remove the screws and lift off the fan cover.

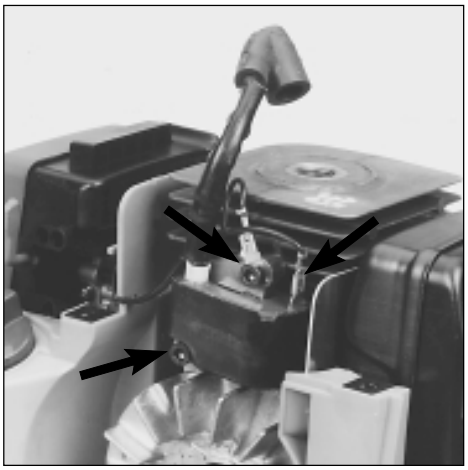
Dismantle the centrifugal clutch by loosening the two bolts.

NOTE!

Hold the clutch carefully using a pipe grip so that the soft clutch linings are not damaged.

We recommend the use of tool no. 531 00 48-62.

Notice which way the clutch faces. The “L”-markings on the clutch shoes face outwards.



Dismantle the ignition module and loosen other cable connections.

Dismantle the ignition module by unscrewing the two bolts.

Loosen the other cable connections and lift out the ignition module.

Model 18H

Remove the spacer and washer and screw the clutch down on the crankshaft.

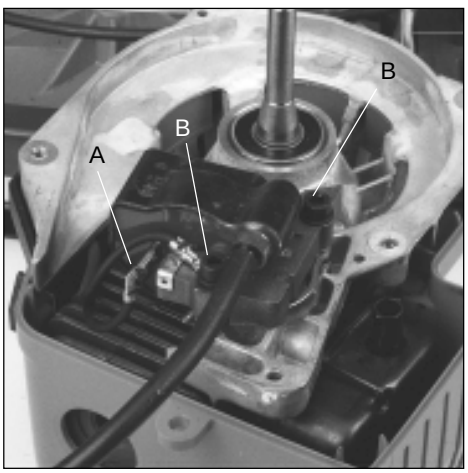
Hold the flywheel and sharply tap the clutch a few times until the flywheel releases.

Model 18H

Remove the long spacer and washer from the crankshaft.

Screw down the clutch a few turns on the shaft.

Hold the flywheel and sharply tap the clutch a few times until the flywheel releases.



Dismantle the ignition module.

Dismantle the ignition module.

Remove the short-circuit cable (A) and both screws (B).

Models 140B, 141B

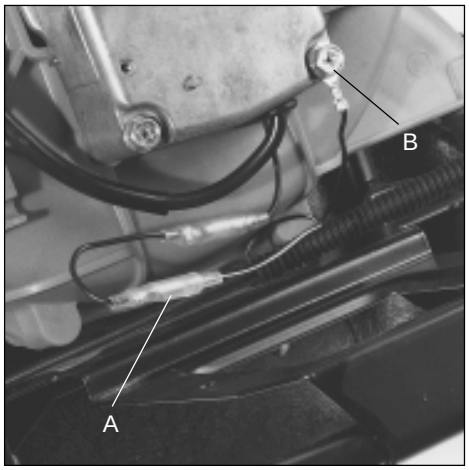
Dismantle the fuel tank.

Models 140B, 141B

Empty the fuel tank and pull off the fuel hoses from the carburettor.

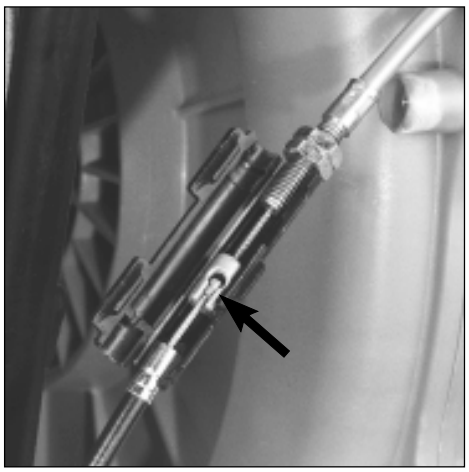
Note how the hoses are connected.

Remove the screws and lift off the fuel tank.



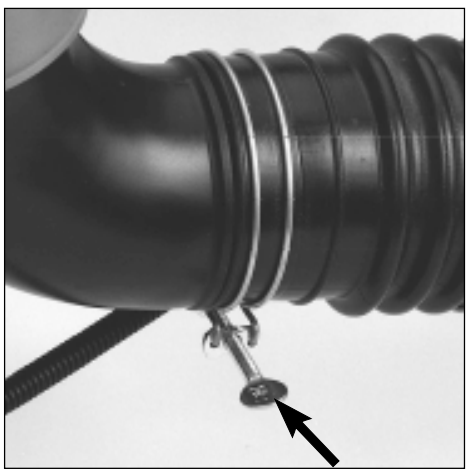
Pull apart the short-circuit cable connector and remove the earth cable.

Separate the connectors for the short-circuit cable (A) and remove the earth cable (B) by removing the crankcase screw.



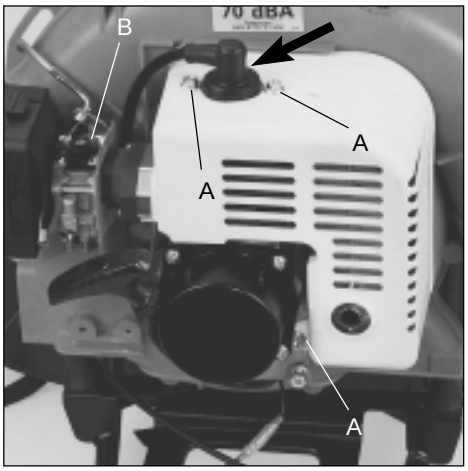
Fold open the protective sleeve and separate the throttle cable.

Open the protective sleeve over the cable joint and lift out the throttle cable running to the throttle.

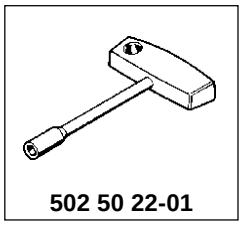


Remove the blower pipe.

Loosen the hose clip and remove the blower pipe.



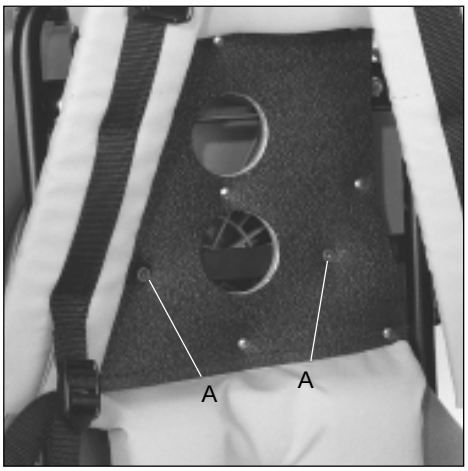
Dismantle the cylinder cover, heat guard around the cylinder and the rotary valve from the carburettor.



Lift off the spark plug cap and unscrew the spark plug.

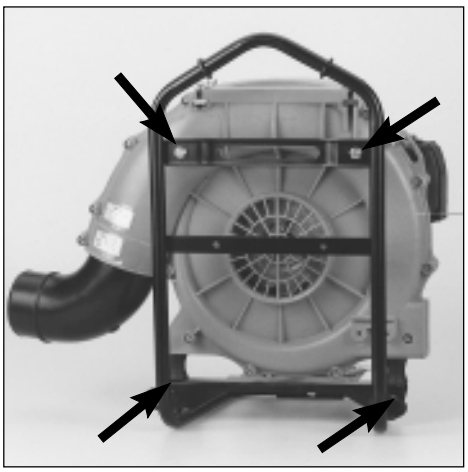
Remove the 3 screws (A) holding the cylinder cover and remove this and the heat guard from around the cylinder.

Dismantle the rotary valve (B) from the carburettor by removing the 2 screws holding the cover. Let the throttle hang from the throttle cable.



Dismantle the harness.

Remove the harness from the tubular frame by removing both screws (A).



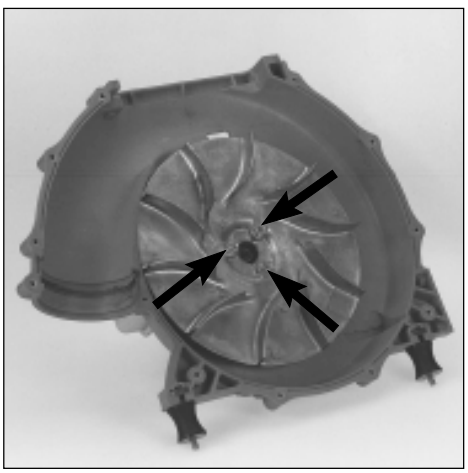
Remove the pipe bend.

Remove all screws and separate both halves of the fan housing.

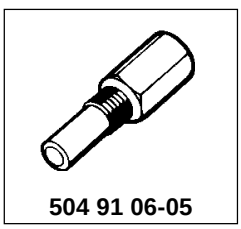
Remove the pipe bend.

Remove the cleaning cover and all the screws (12) holding both halves of the fan housing.

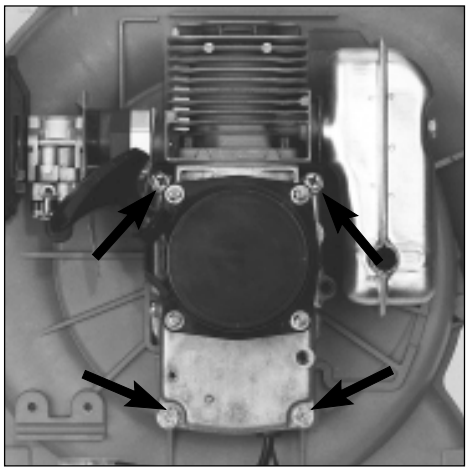
Separate the halves.



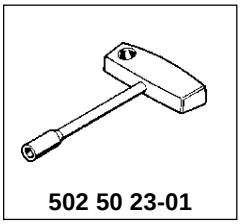
Dismantle the impeller.



Screw in the piston stop no. 504 91 06-5 in the spark plug hole and remove the 3 screws holding the impeller using tool no. 502 50 23-01.



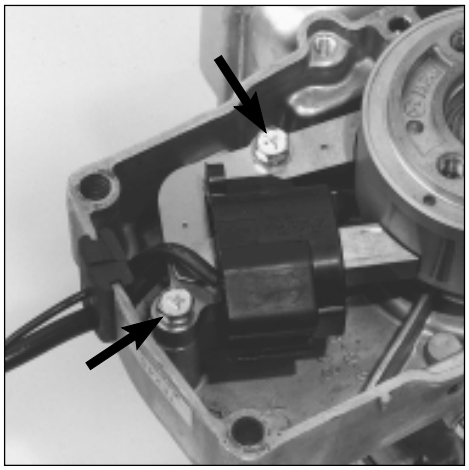
Dismantle the engine from the fan housing.



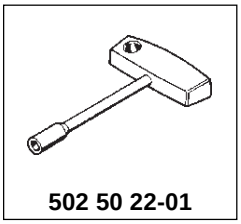
502 50 23-01

Remove the 4 screws holding the engine against the fan housing.

Lift off the engine.

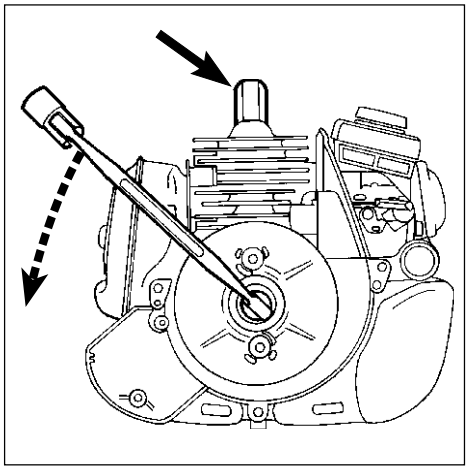


Remove the screws and lift off the ignition module.



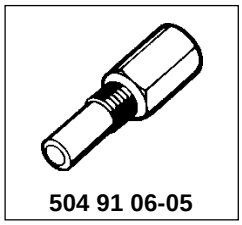
502 50 22-01

Remove the screws and lift off the ignition module with the ignition lead, short-circuit cable and grommet.



Dismantling the flywheel

Fit the piston stop no. 504 91 06-05 and remove the nut holding the flywheel and where appropriate the plate with drive dogs.



504 91 06-05

Dismantling the flywheel

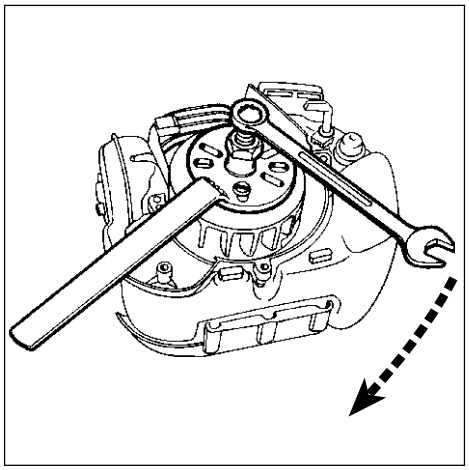
Assemble the piston stop no. 504 91 06-05 in the spark plug hole.

Ensure the piston stop is screwed down to the bottom.

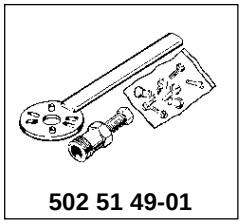
Remove the nut holding the flywheel and where appropriate the plate with drive dogs.

NOTE!

The piston stop cannot be used on model 122.



Dismantle the flywheel by using the flywheel puller.

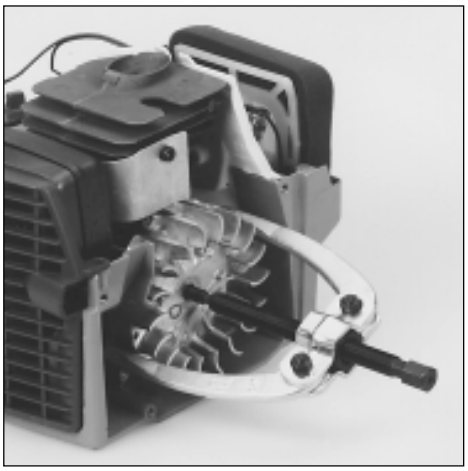


502 51 49-01

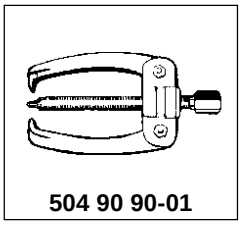
Dismantle the flywheel from the crankcase using the puller no. 502 51 49-01.

Gently knock the puller screw with a hammer, if the flywheel sits tightly on the crankshaft.

Select suitable screws and align the puller so that it does not pull at an angle.



Dismantle the flywheel by using the bearing puller.



504 90 90-01

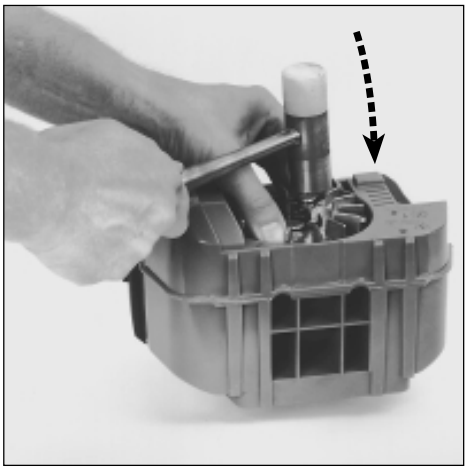
Pull off the flywheel using the bearing puller no. 504 90 90-01.

NOTE!

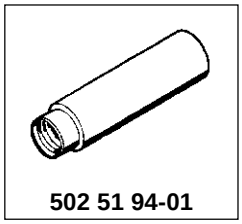
The arms on the puller should be placed by and opposite the magnet on the flywheel to avoid damaging it.

Is the flywheel really tight?

Lift up the engine body by holding the puller and knock the puller screw a few times with a hammer.



Dismantle the flywheel by using a hammer and push bar.



502 51 94-01

Screw the nut on the axle to protect the thread.

Unhook the springs and fold back the drive dogs to give a little room for the hammer.

Grip the flywheel and lift up the engine body.

Apply a few sharp blows with a hammer on the flywheel nut until the flywheel frees itself from the axel.

Tip!

Use the push bar to protect the tread at the same time as it is easier to use the hammer.

Do not screw the push bar completely up to the flywheel – leave about 2 mm.

Drive dogs

General

Check the drive dogs with regard to wear and cracking.

Replace damaged components.

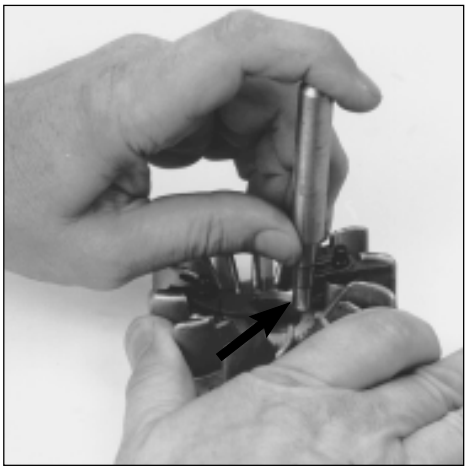
Drive dogs

General

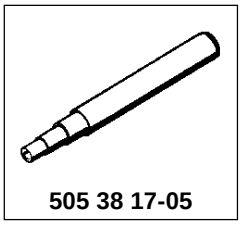
Check the drive dogs with regard to wear and cracking.

Replace damaged components.

The entire unit must replaced if the drive dogs are fitted on a separate bridge.



Dismantle the locking clip.



505 38 17-05

Turn the locking clip so that the opening aligns with the centre of the flywheel.

Use, e.g. punch no. 505 38 17-05 and press off the clip.

Dismantle the drive dogs and the return spring.

Unscrew the bearing pin.

Replace any damaged parts.

Dismantle the drive dogs and the return spring.

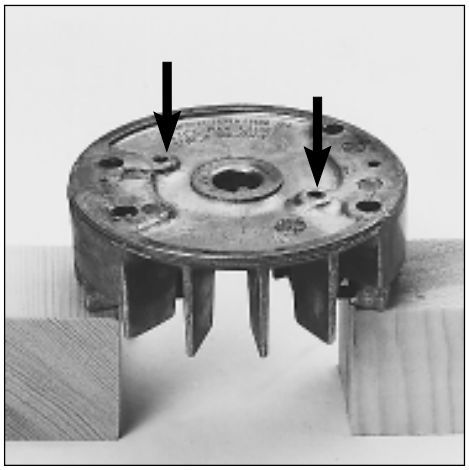
Unscrew the bearing pin.

Replace any damaged parts.

Check that the drive dogs move easily.

NOTE!

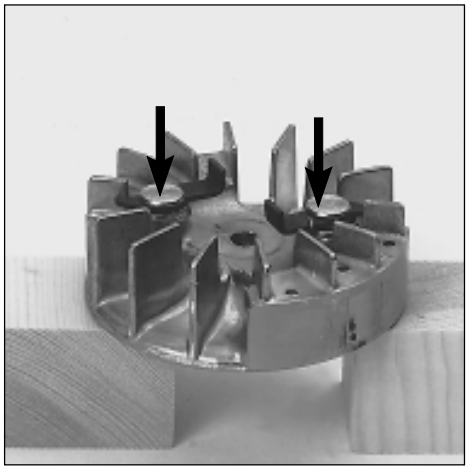
The spring clip's opening should be turned outwards between the fan fins.



Press out the bearing studs using a suitable punch.

Replace the drive dogs and springs as follows if they are journalled on a stud pressed into the flywheel:

Place the flywheel on support blocks and press out the studs using a suitable punch.

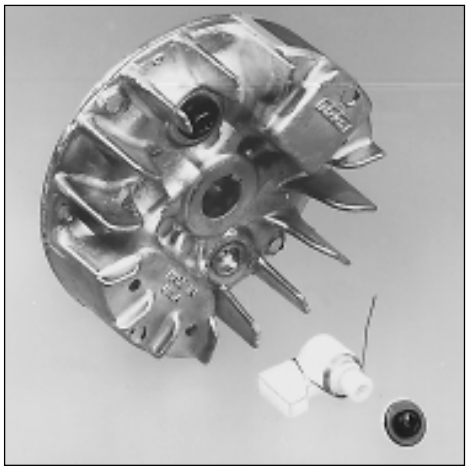


Replace damaged parts.

Replace damaged parts.

Ensure the springs are not crushed when the stud is pressed into the flywheel.

Check that the drive dogs move easily.



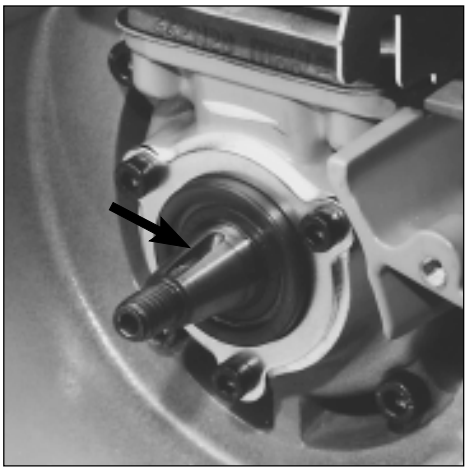
Models Mondo, 18H

The drive dogs can be dismantled once the screws on the opposite side of the flywheel have been removed.

Models Mondo, 18H

On these models the drive dogs are held in place by screws, tightened from the opposite side of the flywheel.

Dismantle the bolts and lift off the drive dogs.



Assembly

Check that the keyway and key on the crankshaft are not damaged.

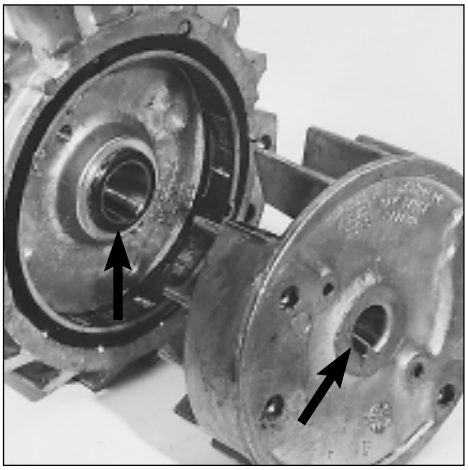
Assembly

Check that the keyway and key on the crankshaft are not damaged.

Fit a new key if necessary and ensure it sits correctly in the keyway.

NOTE!

If the crankshaft has two keyways it is the keyway that is open all the way out to the thread which is used if the flywheel has a cast key.



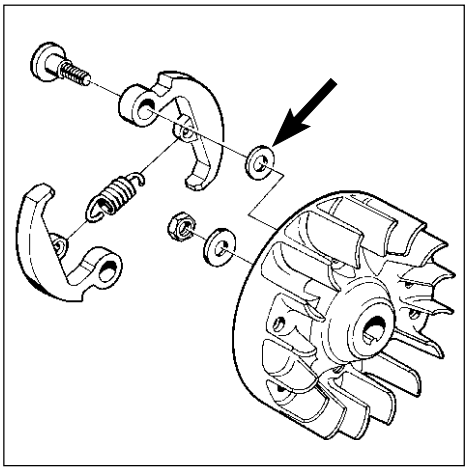
Check that the keyway and cast key on the flywheel are not damaged.

Fit the flywheel.

Check that the keyway and cast key on the flywheel are not damaged.

Fit the flywheel on the crankshaft and check that key and keyway are correctly aligned before the flywheel nut is tightened.

Tighten the nut to a torque of 25–35 Nm.



Models 322, 325

Assemble the centrifugal clutch.

NOTE!

Do not forget the washers between the flywheel and centrifugal clutch.

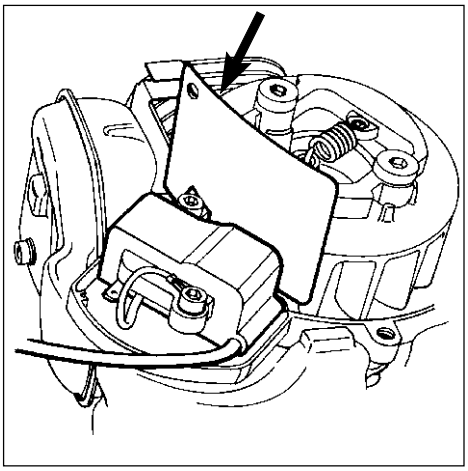
Models 322, 325

If the crankshaft has two keyways, the flywheel should be fitted in the right-hand keyway seen from the axle end.

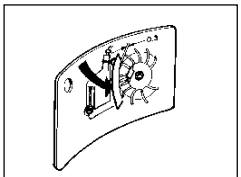
Assemble the centrifugal clutch.

NOTE!

Do not forget the washers between the flywheel and centrifugal clutch.



Assemble the ignition module and adjust the air gap to 0.3 mm.



502 51 34-02

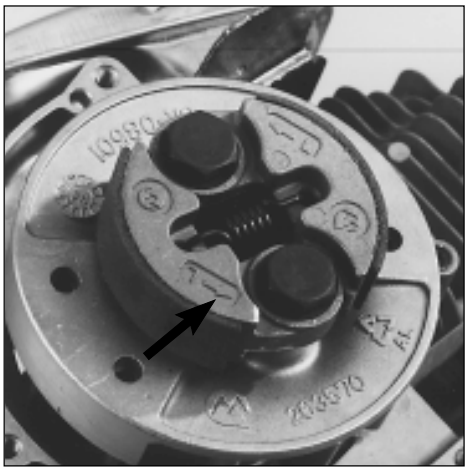
Assemble the ignition module.

Wait to connect the short-circuit cable to facilitate the adjustment of the air gap. It should be 0.3 mm between the permanent magnets in the flywheel and the ignition module.

Now fit the short-circuit cable and the remaining parts in the reverse order as set out for dismantling.

NOTE!

Do not forget the rubber bushings between the clutch cover and the fuel tank.



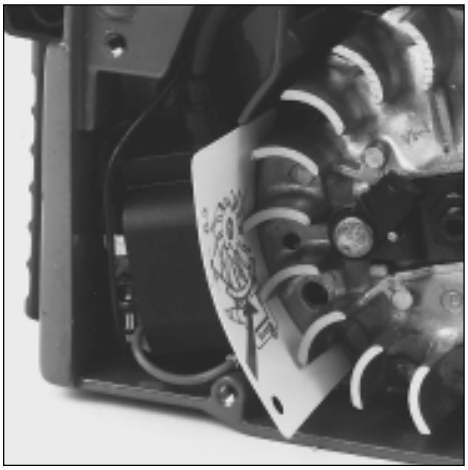
Model 122

Turn the centrifugal clutch so that the “L”-marking on the clutch shoes is facing **outwards.**

Model 122

As the centrifugal clutch is fitted on the flywheel it is important that it is positioned so that the “L-marking” on the shoes faces **outwards.**

“L” means left rotation.



All models

Fit the ignition module.

Adjust the air gap (0.3 mm).

Fit the other cables.

Fit the remaining components in the reverse order set out for dismantling.

All models

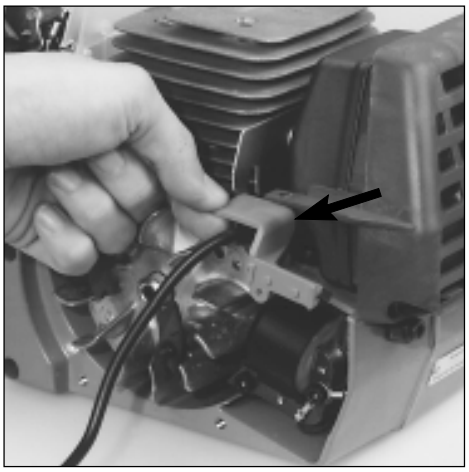
Fit the ignition module.

Adjust the air gap (0.3 mm).

Also see page 26.

Fit the other cables and ensure they sit correctly in the cable channels, etc. so that they cannot be damaged.

Fit the remaining components in the reverse order set out for dismantling.



Model 250

Do not forget to fit the heat guard for the ignition cable.

Model 250

Fit the earth cable using the AMP connector on the ignition module before it is screwed onto the crankcase.

NOTE!

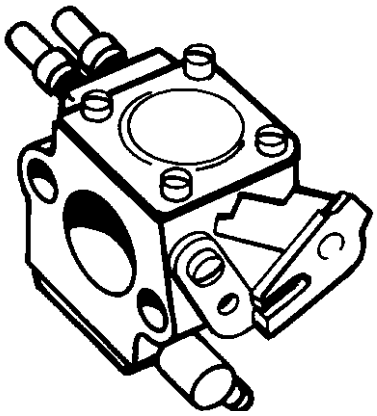
Do not forget the plastic components that protect the ignition cable from the radiant heat from the muffler.

Technical data

Model	Spark plug	Electrode gap mm/inch	Ignition system	Air gap mm/inch
Mondo	Champion RCJ8Y NGK BPM 6A	0.5/0.02	Phelon CD	0.3/0.012
122L	NGK BPM 6Y	0.6/0.024 Solid State	Ikeda Denso	0.3/0.012
Mondo Max	Champion RCJ 8Y	0.5/0.02	Phelon CD	0.3/0.012
225L/LD	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.012
232L	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.012
Mondo Mega	Champion RCJ 8Y	0.5/0.02	Phelon CD	0.3/0.012
225R/RD	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.012
232R	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.012
322	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.012
325	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.012
235R	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.012
240R	Champion RCJ 7Y	0.5/0.02	Electrolux ET	0.3/0.012
245R	Champion RCJ 7Y	0.5/0.02	Electrolux ET	0.3/0.012
250R	Champion RCJ 7Y	0,5/0.02	Electrolux ET	0.3/0.012
245RX	Champion RCJ 7Y	0.5/0.02	Electrolux ET	0.3/0.012
250RX	Champion RCJ 7Y	0.5/0.02	Electrolux ET	0.3/0.012
252RX	Champion RCJ 7Y	0.5/0.02	Electrolux ET	0.3/0.012
265RX	Champion RCJ 7Y	0.5/0.02	SEM GA6 CD	0.3/0.012
240RBD	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.012
235P	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.012
250PS	Champion RCJ 7Y	0.5/0.02	Electrolux ET	0.3/0.012
225E	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.12
18H	Champion RCJ 8Y	0.5/0.02	Phelon Solid State	0.3/0.012
225H60/75	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.012
140B/141B	NGK BPM 7A	0.6–0.7/ 0.024–0.028	Kawasaki Transistor	0.4/0.016
132HBV	Champion CJ 8Y	0.6/0.024	Phelon CD	0.25–0.35/ 0.010–0.014
225BV/225HBV	Champion RCJ 7Y	0.5/0.02	Walbro CD	0.3/0.012

Fuel system

3.

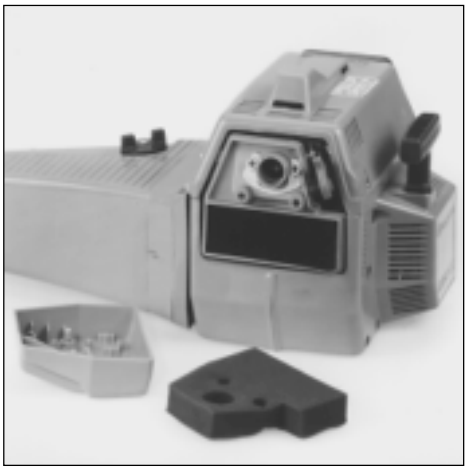


Contents

The fuel system comprises, in addition to the fuel tank and the carburettor, the air filter, fuel filter and tank venting.

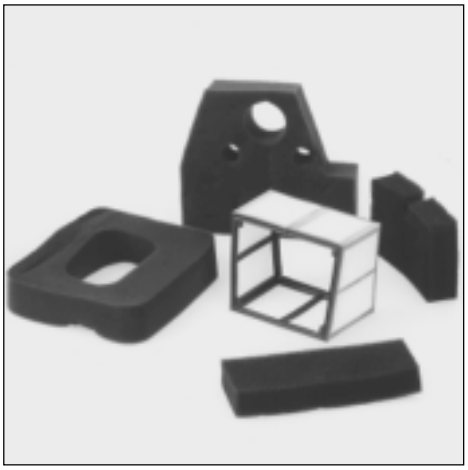
All these components interact so that the engine receives the optimum mixture of fuel and to make it as efficient as possible. Extremely small adjustments to the carburettor setting or air filter blockage have a great effect on how the engine runs and its efficiency.

The carburettor on our models can come from several manufacturers, but the operation and repair techniques are essentially the same.



Air filter

Dismantle the cylinder cover and air filter cover so that the filter is accessible.

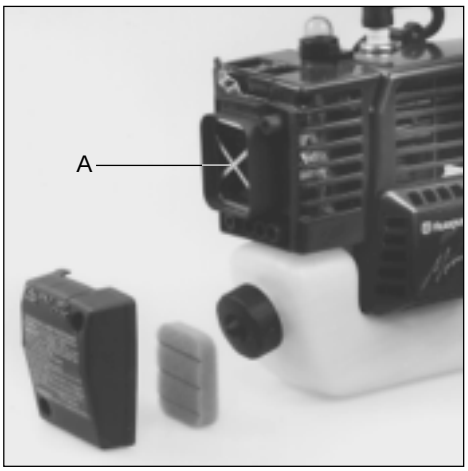


The air filter material can either be of foam or of fine mesh nylon weave.

Both types are cleaned in tepid, soapy water.

Damaged filters shall be replaced with a new filter.

505 69 85-70



Model Mondo

Dismantle the air filter cover and lift out the air filter for cleaning.

Air filter

Dismantle the cylinder cover and air filter cover so that the filter is accessible.

The air filter material can either be of foam or of fine mesh nylon weave.

Both types are cleaned in tepid, soapy water.

Damaged filters shall be replaced with a new filter.

WARNING!
Do not clean the filter in petrol. Hazardous!

NOTE!

The filter must be dry when its refitted.

Tip!

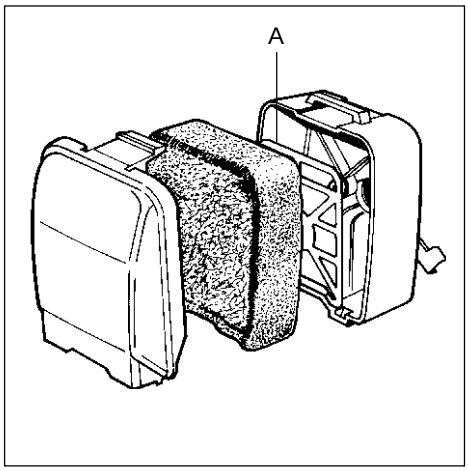
Use Husqvarna's cleaning agent Active Cleaning no. 505 69 85-70.

Model Mondo

Dismantle the air filter cover and lift out the air filter for cleaning.

NOTE!

It is important when refitting that the filter support (A) is not forgotten. Otherwise particles from the air filter can be drawn into the carburettor.



Model 141B

Remove the air filter cover and lift out the air filter for cleaning.

Model 141B

Press down the catch on the cover over the air filter housing and remove the cover and the air filter for cleaning.

Clean the filter in the same way as described above.

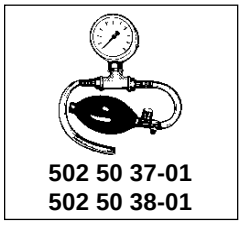
Fit the filter with the smooth side facing in towards the carburettor.

Ensure the support grille (A) is in position.

Tank venting

Check that the tank venting valve functions.

Change the tank cap on most models if the valve is faulty.



502 50 37-01
502 50 38-01

Tank venting

On most models the tank venting is located in the fuel cap. It is important for the operation of the engine that it works.

- Remove the fuel pipe from the carburettor and empty the fuel from the tank.
- Connect the fuel pipe to the pressure tester no. 502 50 38-01 resp. vacuum tester no. 502 50 37-01.
- Pump a pressure resp. underpressure of 50 kPa (0.5 bar) in the tank.
- The pressure should drop to 20 kPa (0.2 bar) resp. return to normal pressure within 45 seconds.

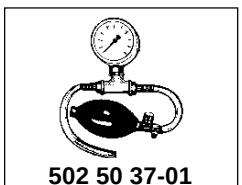
Model 122

Dismantle the valve complete with hose by pulling it upwards.

Model 122

The valve is located on this model by the carburettor and can easily be dismantled from the tank for inspection. If necessary pull it up with the help of a screwdriver.

Pressure test the valve using pressure and vacuum.



502 50 37-01
502 50 38-01

Pressure test the valve using pressure and vacuum.

The valve should open at:

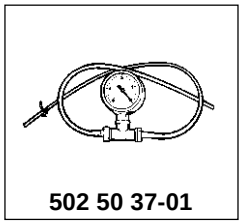
Pressure: 25–30 kPa (0.25–0.30 bar)
Vacuum: 25–30 kPa (0.25–0.30 bar)

Replace the complete valve and hose if it is faulty.

Apply a small amount of grease on the hose connection to facilitate fitting the valve in the tank.

Model 32

The venting valve is located in the tank. Check that it functions using the vacuum tester 502 50 37-01.



502 50 37-01

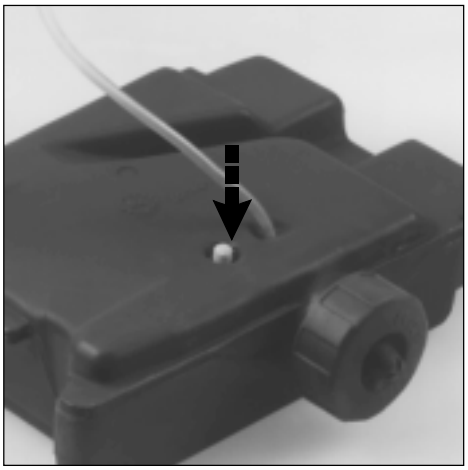
Model 32

The venting valve is inserted in the tank.

To gain access for inspection or replacement it is necessary to dismantle the cylinder cover and the starter.

Remove the fuel pipe from the carburettor using a pair of flat pliers and connect the pipe to the vacuum tester 502 50 37-01.

Lower the pressure to –50 kPa (0.5 bar).



Replace the valve if it does not open for vacuum in the tank.

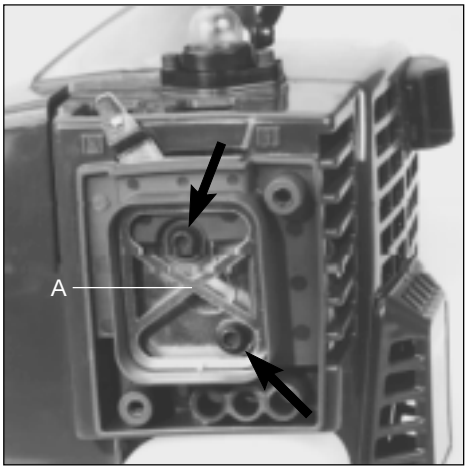
The pressure should normally drop after 20 seconds.

If this is not the case the valve should be replaced.

Press the down valve in the tank using a suitable punch and press in a new valve.

NOTE!

The valve only opens for vacuum in the tank.



Models Mondo, 18H

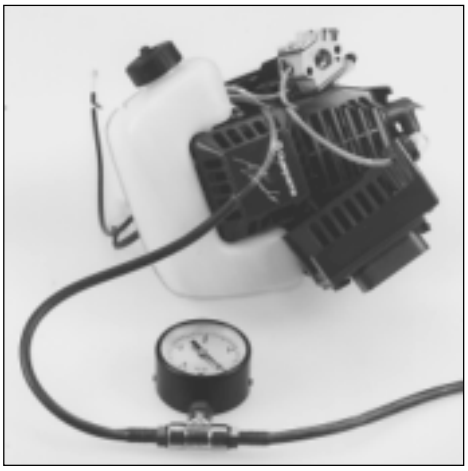
The venting valve sits in the tank cap.

Models Mondo, 18H

The venting valve sits in the tank cap.

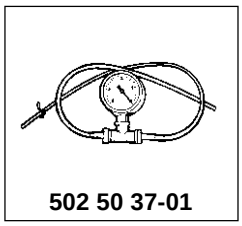
To pressure test it and gain access to the fuel pipe the carburettor cover must be loosened and swung to the side (Mondo).

Remove the air filter support (A) and both bolts that hold the carburettor cover and the carburettor(Mondo).



Empty the fuel from the tank.

Check the valve using the vacuum tester 502 50 37-01.



502 50 37-01

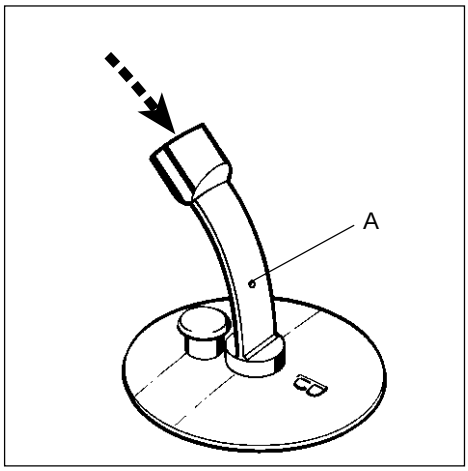
Note where the bolts are positioned so that they can be repositioned correctly when assembling (Mondo).

Empty the fuel from the tank.

Dismantle the pipe, which runs from the fuel tank to the primer pump, from the pipe connection.

Connect the vacuum tester 502 50 37-01. Reduce the pressure to –50 kPa (0.5 bar). The pressure should return to the normal pressure within 20 seconds.

Clean or replace the fuel cap if necessary.



Model 141B

The tank ventilation is integrated in the fuel cap's gasket

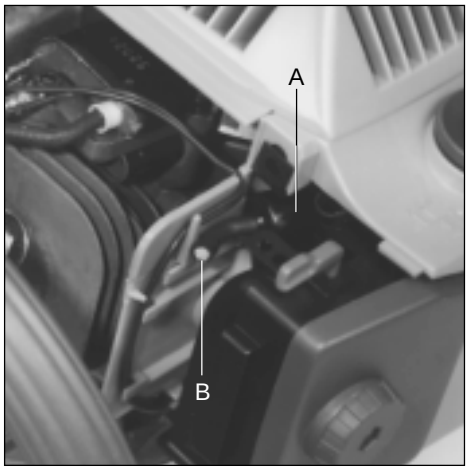
Blow through the flat hose to check that it is open.

Model 141B

The tank ventilation is integrated in the fuel cap's gasket and can easily be dismantled for replacement.

Pull off the flat hose from the pin on the rubber washer and blow through the hose to check that it is not blocked.

Check that the hole (A) is open.



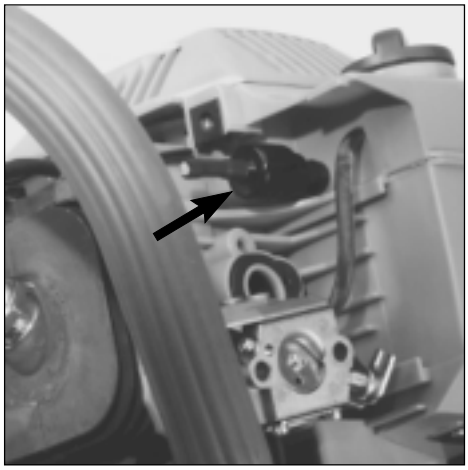
Models 225 H60, 225 H75

Tank ventilation consists of a non-return valve (A) that opens for vacuum and pressure. It is located in the carburettor housing.

- Empty the fuel tank and tighten the fuel cap.
- Clean the filter (B).
- Remove the fuel pipe from the carburettor and connect the pressure tester 502 50 38-01 resp. vacuum tester 502 50 37-01 to the pipe.

Pressure: Pump a pressure of 50 kPa (0.5 bar), the pressure should drop to 20 kPa (0.2 bar) within 60 seconds.

Vacuum: Reduce the pressure to –50 kPa (0.5 bar). The pressure should rise again to –20 kPa (0.2 bar) within 30 seconds.



Replace the valve if its performance is not satisfactory.

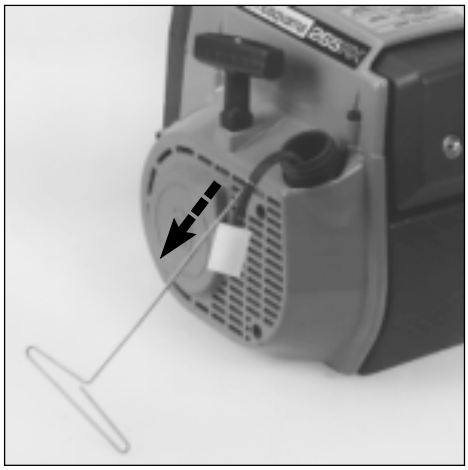
If the valve does not work as intended it should be replaced.

Dismantle the air filter holder and swing out the carburettor.

Pry up the non-return valve from the fuel tank using a screwdriver.

NOTE!

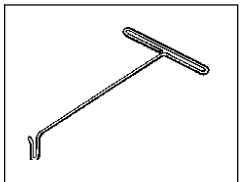
Fit the new valve with the short shoulder towards the fuel tank.



Fuel filter

All models

The fuel filter can be removed through the tank's filler hole.



502 50 83-01

Fuel filter

All models

A fuel filter is located on the fuel pipe. It is accessible through the filler hole. Pull out the filter using your fingers or using tool 502 50 83-01.

Clean the outside of the filter if it is too heavily contaminated.

Replace the filter if necessary.

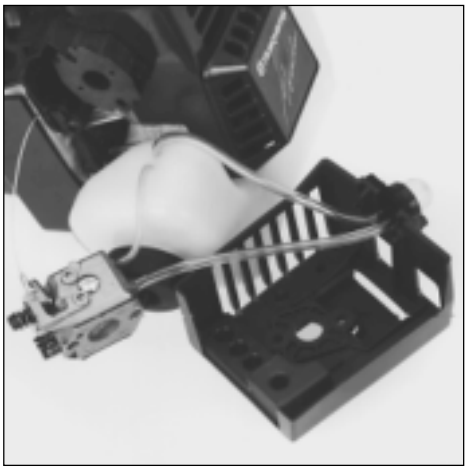
If it is too heavily contaminated it can be cleaned on the outside using a brush.

In all other cases it should be replaced.

Check the fuel pipe with regard to cracking and leakage.

NOTE!

Ensure that the filter's connection shoulder is press into the fuel pipe as far as possible.



Primer pump

Models 322, 325, Mondo, 18H

The primer pump facilitates cold starts.

The pump cannot be repaired and must be replaced if it stops working.

Note how the fuel hoses are connected to simplify assembly.

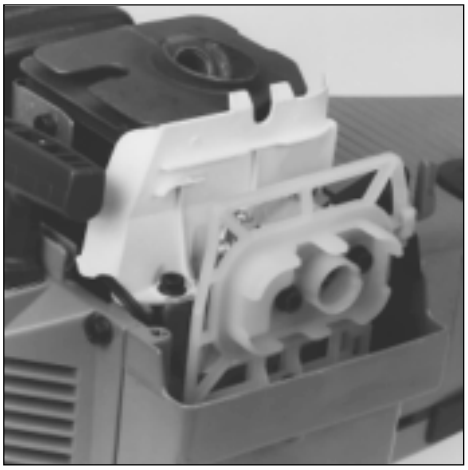
Primer pump

Models 322, 325, Mondo, 18H

The primer pump has the task of facilitating the start of the engine when cold. The pump fills the carburettor with fuel before attempting to start the engine. This also prevents vapour bubbles from blocking the narrow fuel channels.

If the pump does not work it must be replaced.

Note how the fuel hoses are connected to simplify assembly.



Carburettor

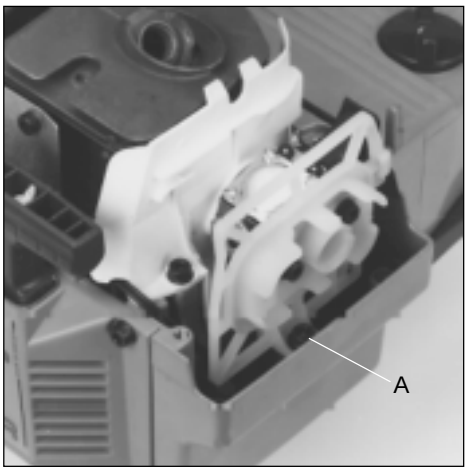
Dismantling all models

Dismantle the cylinder cover and blow out the carburettor compartment with compressed air.

Carburettor

Dismantling all models

- Dismantle the cylinder cover.
- Close the choke damper to prevent dirt from entering the engine.
- Blow out the carburettor compartment with compressed air.



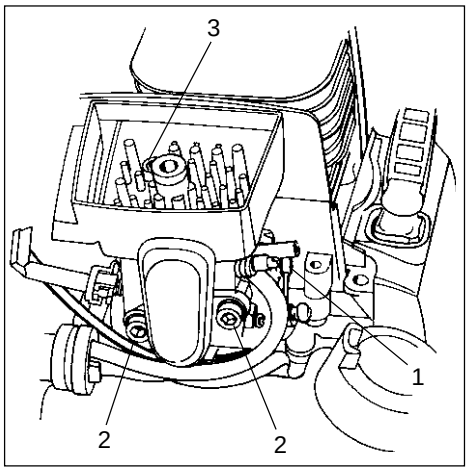
Dismantle the carburettor.

Dismantle the air filter and air filter holder, fuel pipe, throttle cable and choke lever.

Lift out the carburettor.

Tip!

Let the lower screw (A model 245) remain in the crankcase. This simplifies subsequent assembly.



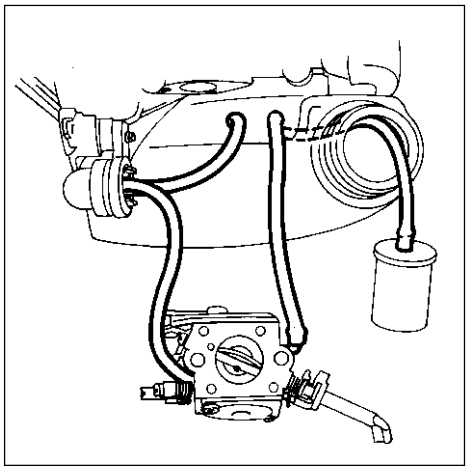
Models 322, 325

Disconnect the throttle cable from the carburettor.

Dismantle the carburettor.

Models 322, 325

1. Disconnect the throttle cable from the lever arm on the carburettor.
2. Loosen the carburettor screws.
3. Remove the screws holding the air filter holder.



Lift off the carburettor and note how the fuel hoses are connected.

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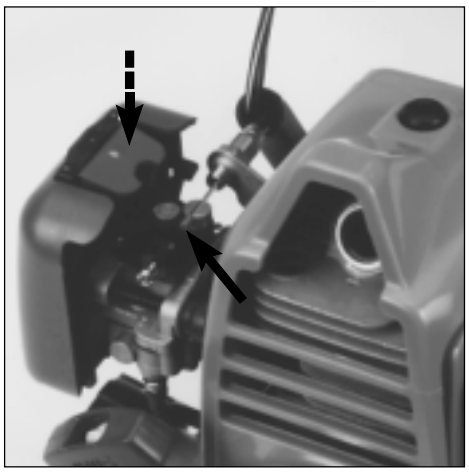


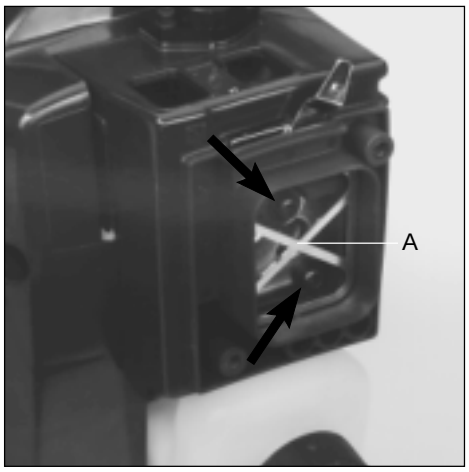
Model 122

Disconnect the throttle cable from the carburettor. Fold down the air filter cover and dismantle the carburettor.

Model 122

Disconnect the throttle cable from the lever arm on the carburettor.

Press down the snap-lock and swing down the air filter so that the screws holding the carburettor are accessible.



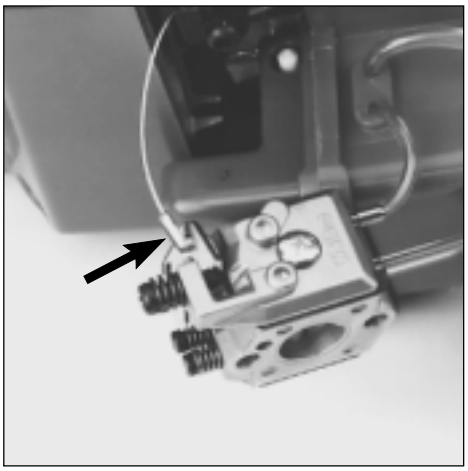
Model Mondo

Loosen and turn the carburettor to the side.

Model Mondo

Remove the filter support (A) and both screws that hold the carburettor cover and the carburettor.

Note where the screws are placed so that they can be positioned correctly when assembling.



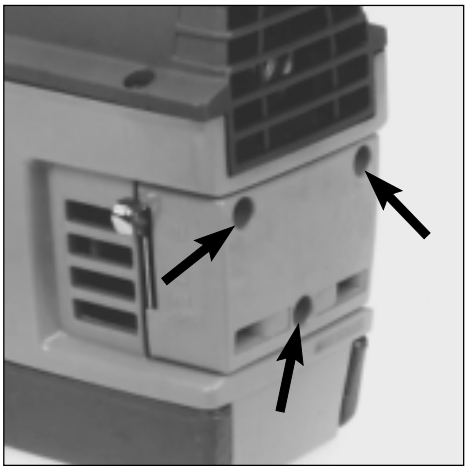
Bend out the throttle cable.

Remove the fuel pipes.

Bend out the throttle cable.

Remove the fuel pipes. If they are hard to remove, use a screwdriver to press them off.

Note how the hoses are fitted so they can be correctly reassembled.

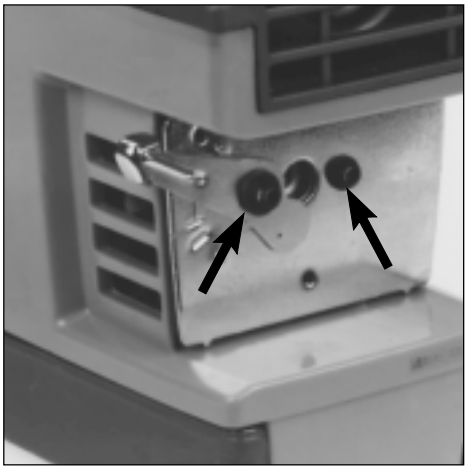


Model 32

Dismantle the air filter cover with filter.

Model 32

The carburettor is located on the crankcase and becomes accessible when the 3 screws and the air filter cover and air filter are removed.



Dismantle the carburettor screws and lift out the carburettor.

Remove the carburettor screws, choke lever and cover plate.

Note how the washers on the choke lever screws sit.

Now lift out the carburettor.

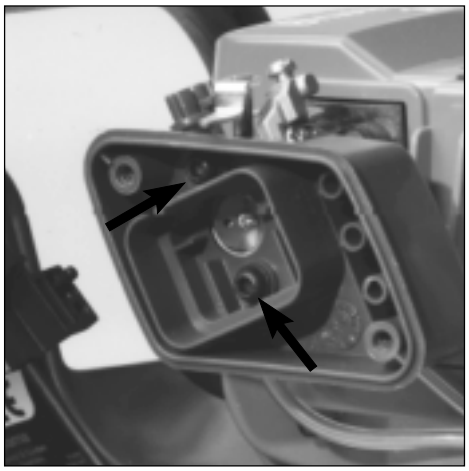
Model 18H

Disconnect the throttle cable from the carburettor.

Model 18H

Disconnect the throttle cable from the carburettor.

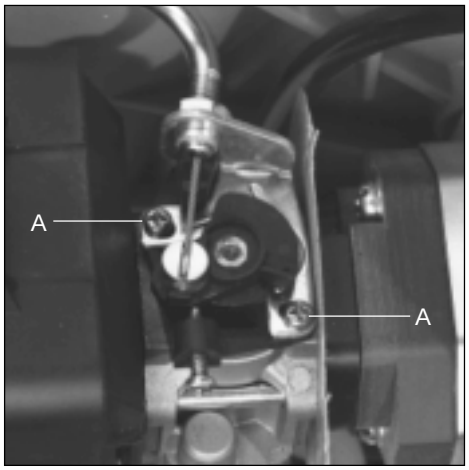
Remove the screw (B) and unhook the throttle cable from the lever arm on the carburettor (A).



Dismantle the carburettor from the cylinder.

Loosen the carburettor screws and lift out the air filter holder and carburettor.

Remove the fuel hoses from the carburettor.



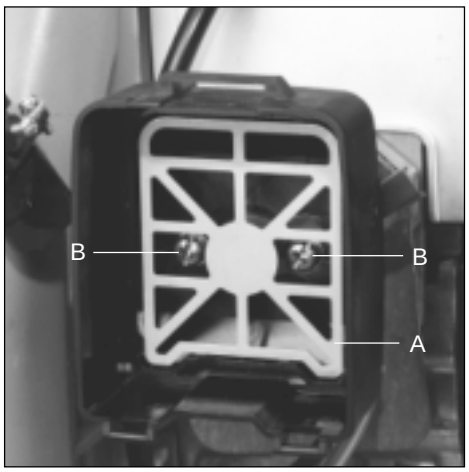
Model 141B

Dismantle the cover together with the rotary valve and cable bracket.

Model 141B

Loosen both screws (A) and lift off the cover together with the rotary valve and cable bracket.

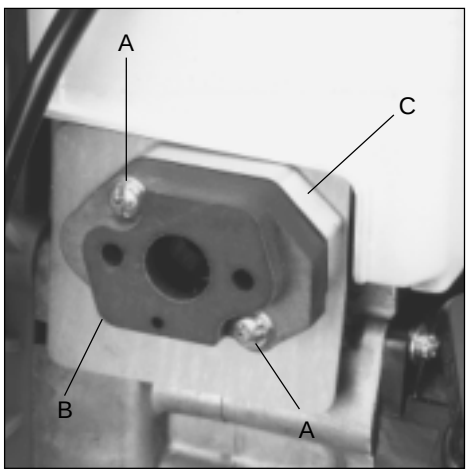
Let the parts remain hanging from the throttle cable if they are not damaged and do not need to be replaced.



Dismantle the carburettor from the cylinder.

Remove the air filter support (A) and both screws (B) that hold the carburettor on the cylinder.

Lift off the air filter holder and carburettor from the cylinder.



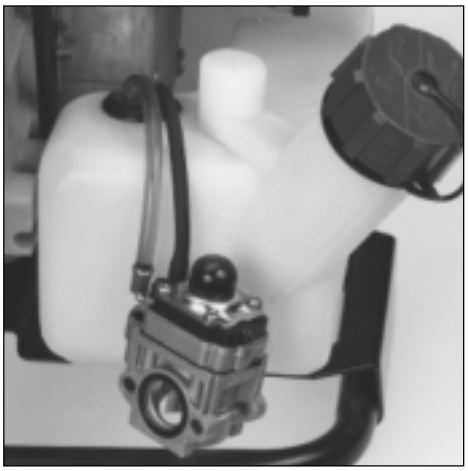
Remove the screws and lift out both distance pieces.

Inspect the fibre distance piece with regard to crack formation.

Replace the distance piece if necessary.

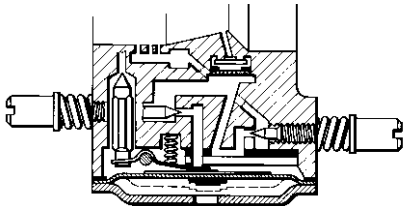
Remove the screws (A), the fibre distance piece (B) and the aluminium distance piece (C).

Inspect the fibre distance piece with regard to crack formation. Replace the distance piece if necessary.



Pull off the fuel hoses and lift out the carburettor.

Lift out the carburettor and note how both fuel hoses are connected to the carburettor (rubber hose on the straight nipple).



Design of the carburettor

The carburettor can be divided in three different sub-systems: metering unit, mixing venturi and pump unit.

Metering unit

The unit houses the jets and fuel control functions.

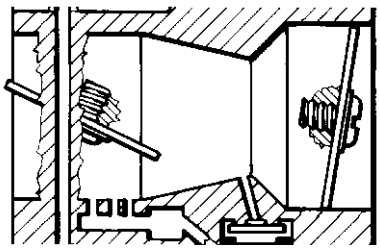
Design of the carburettor

The carburettor can be divided in three different sub-systems: metering unit, mixing venturi and pump unit.

Metering unit

The unit houses the jets and fuel control functions.

The needle valves and control diaphragm are vital to the operation of the carburettor.



Mixing venturi

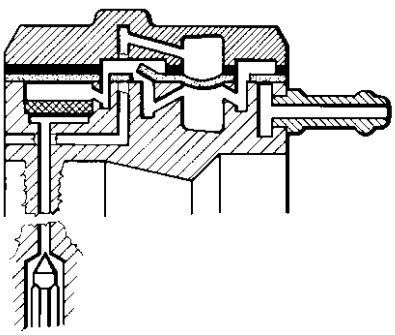
Fuel and air are mixed here.

Mixing venturi

The fuel and air are mixed in the correct proportions in this part of the carburettor.

The choke and throttle valve are placed here.

In the centre of the venturi (narrowest part of the flow area) is the main jet.



Pump unit

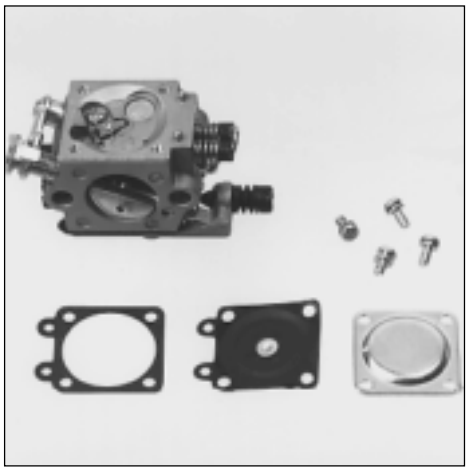
Pumps fuel from the tank to the carburettor.

Pump unit

The pump diaphragm, which pumps fuel from the tank to the carburettor's metering unit is located here.

The diaphragm is actuated by the pressure variations in the engine's crankcase via a pulse channel.

If the channel is blocked, e.g. by grease, a gasket turned the wrong way or carbon deposits the pump unit will not work and the engine cannot be started.



Stripping the carburettor
General

Remove the control diaphragm and check for damage.

Replace if necessary.

Stripping the carburettor
General

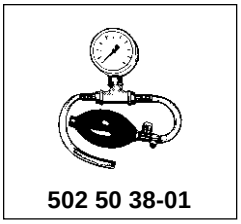
Remove the 4 screws holding the control diaphragm cover and lift off the cover.

Carefully remove the control diaphragm and the gasket.

Check the diaphragm for holes and wear on the pin.

Replace the diaphragm if necessary.

Pressure test the metering unit.



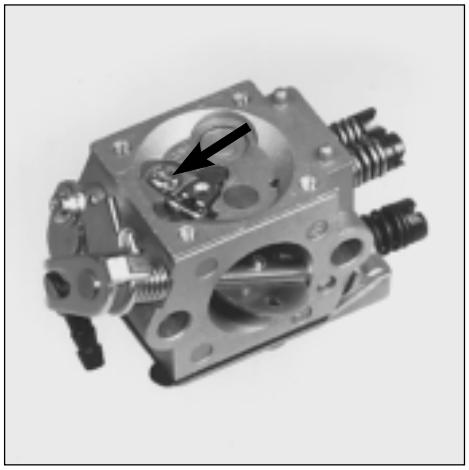
502 50 38-01

Connect pressure tester 502 50 38-01 to the fuel pipe nipple.

Lower the carburettor into a bowl of petrol to make it easier to discover any leakage.

Test with 50 kPa.

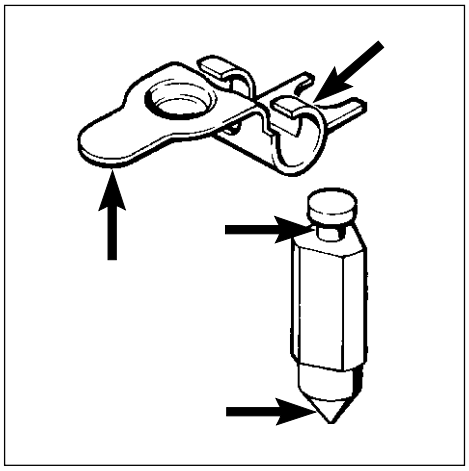
No leakage is permitted.



With leakage – dismantle the needle valve.

In the event of leakage dismantle the needle valve.

Loosen the screw and lift out the lever arm, shaft, needle valve and spring.



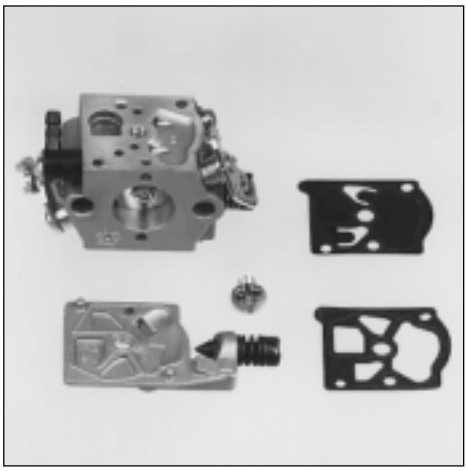
Check the needle valve and lever arm for wear.

Replace damaged parts.

Check the needle valve for wear to the tip and groove for the lever arm.

Check the lever arm for wear to the lever arm groove and wear to the contact point with the control diaphragm.

Replace damaged parts.



Remove the pump diaphragm.

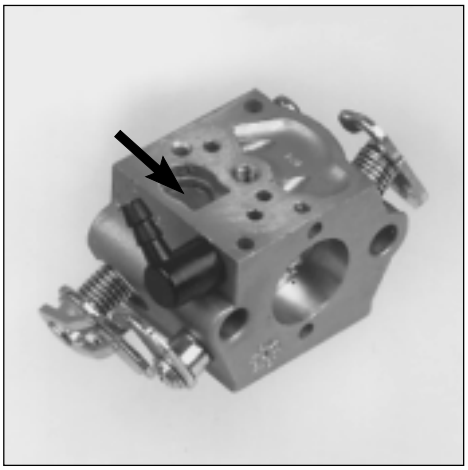
Check the diaphragm for wear.

Remove the screw that holds the cover over the pump membrane.

Lift off the cover, gasket and diaphragm.

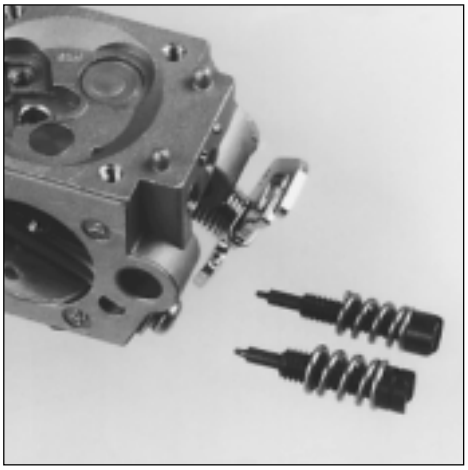
Check the diaphragm for wear to the valve flaps. If the valve flaps are bent the pump will not work satisfactorily.

Also hold it up to a light to see if there are any holes in the material.



Remove the fuel screen.

Carefully remove the fuel screen by using, e.g. a needle.

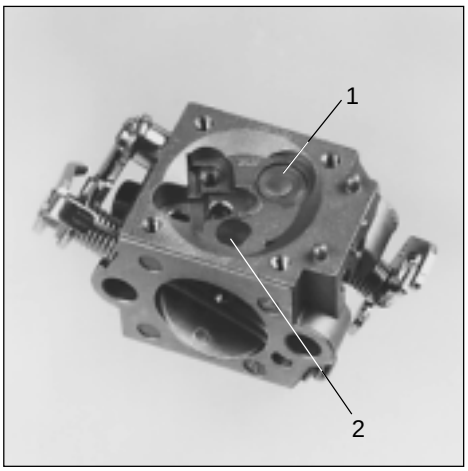


Unscrew the jet needles.

Skruva bort munstycksnålarna.

NOTE!

Remember how the needles were placed. (E.g. the H needle a little shorter than the L needle).



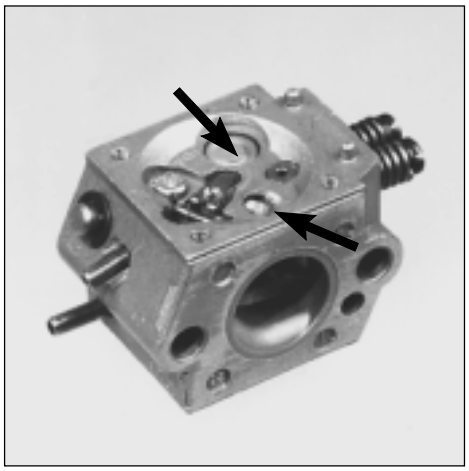
Walbro

Dismantle the plug (1) and main jet (2).

Walbro

Drill a small hole in the plug (1) and carefully pry it out using a pointed object.

Press out the main jet (2) using a suitable punch.

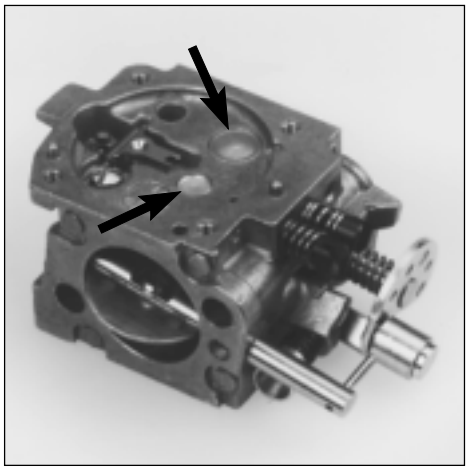


Model Mondo and model 32 have a version of the previously described carburettor with 2 plugs.

Dismantle the plugs.

Model Mondo and model 32 have a version of the previously described carburettor with 2 plugs.

Drill a small hole in the plugs and carefully pry them out using a pointed object.

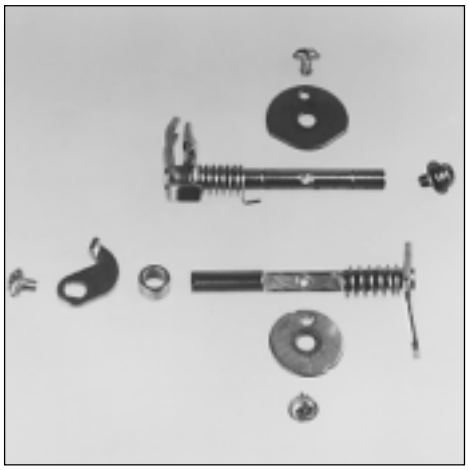


Tillotson

Dismantle the plugs.

Tillotson

Drill a small hole in the plugs and carefully pry them out using a pointed object.



Check the plates and spindles for wear.

Replace damaged parts.

Dismantle the plates and spindles. If these parts are worn this will cause idling to be disruptive.

Always replace the plate and spindles at the same time.

Reassembling the carburettor

Blow out the carburettor housing.

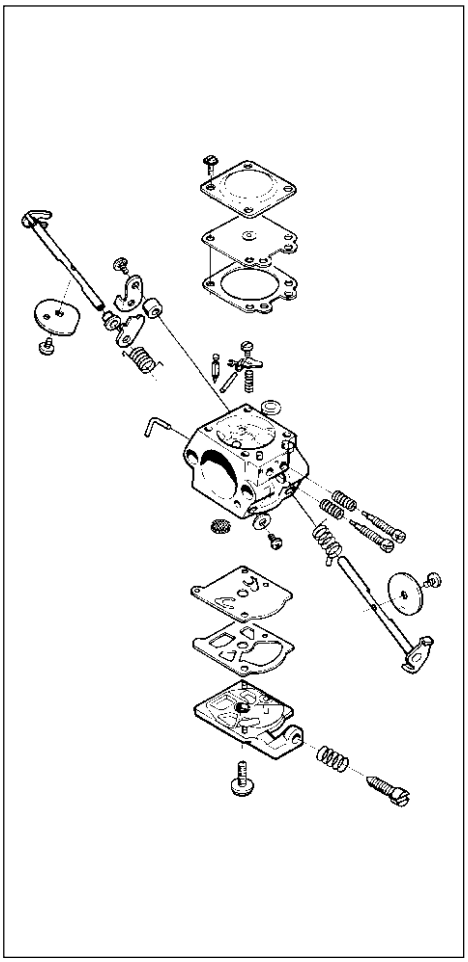
Fit a new plug.

Fit a new main jet.

Reassembling the carburettor

- Blow out all the channels in the carburettor housing.
- Fit a new plug.

  Use a suitable punch to attain complete tightness.
- Press in a new main jet. This should be flush with the carburettor housing.



Fit the plates and spindles.

NOTE!
Use Loctite on the plate screws.

Fit the pump unit's components in the reverse order set out for dismantling.

- Fit the plates and spindles.

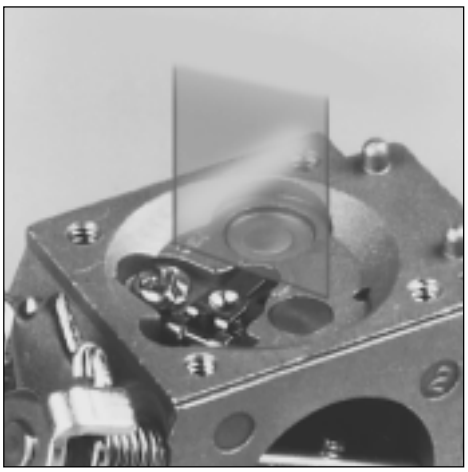
NOTE!
Check that the plate is facing the right way and that it seals correctly in the closed position.
Use Loctite on the plate screws.

Tips!

Any number designation on the plate should be possible to read from the outside.

Replace the fuel screen if it is damaged or if it cannot be cleaned.

Place the pump diaphragm closest to the carburettor housing, then the gasket and cover.



Assemble the components in the mixing venturi in the reverse order set out for dismantling.

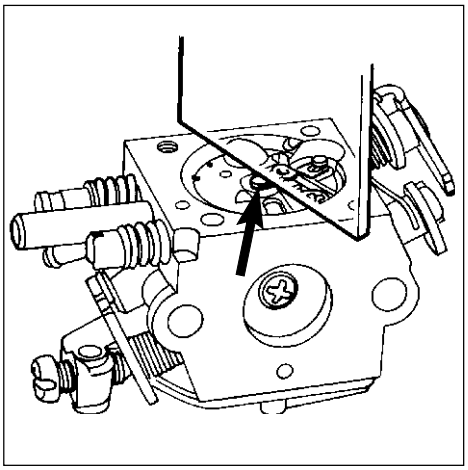
Assemble the components in the mixing venturi in the reverse order set out for dismantling.

NOTE!
The H needle is a little shorter than the L needle.

Check that the lever arm is level with the carburettor housing (Walbro) or level with the gasket face (Tillotson).

Too high setting = too much fuel.

Too low setting = too little fuel.



Zama

Design, function and servicing correspond with the Walbro carburettor.

Zama

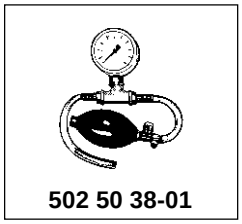
Zama has the same design and function as the Walbro carburettor, which means that servicing is also carried out in the same way.

The lever arm should lie flush with the carburettor housing's contact face.

General

Check that the carburettor does not leak.

No leakage is permitted at a pressure of 50 kPa.



502 50 38-01

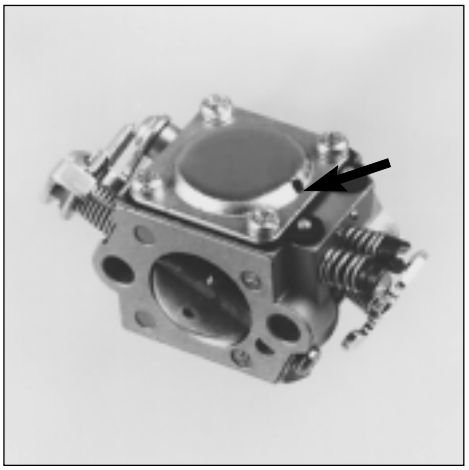
General

Connect the pressure tester no. 502 50 38-01 to the fuel inlet on the carburettor.

Pump up to a 50 kPa pressure.

Lower the carburettor into a bowl of petrol to discover any leakage.

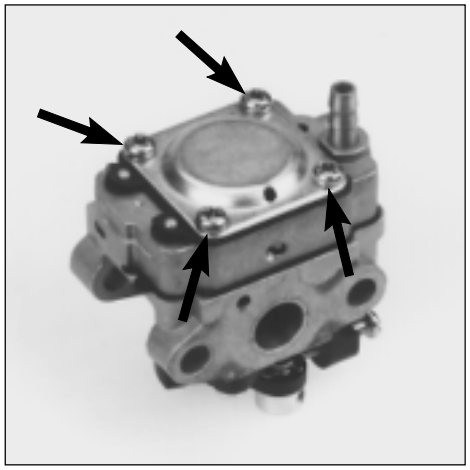
No leakage is permitted.



Fit the control diaphragm.

Place the gasket on the carburettor housing and then the control diaphragm.

Check that the air hole in the cover is open and screw the cover in position.



Dismantling, assembling Model 122

This model has a special Walbro carburettor with pump and metering units placed on the same side as the venturi.

Dismantle the control diaphragm.

Dismantling, assembling Model 122

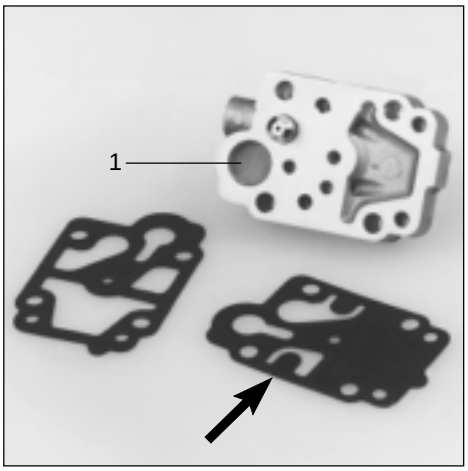
This model has a special Walbro carburettor where the pump and metering unit are placed on the same side as the venturi.

Remove the 4 screws and lift off the cover and control diaphragm.

Dismantle the pump and metering unit.

Separate the pump and metering unit from the carburettor body.

Pry carefully using a screwdriver.



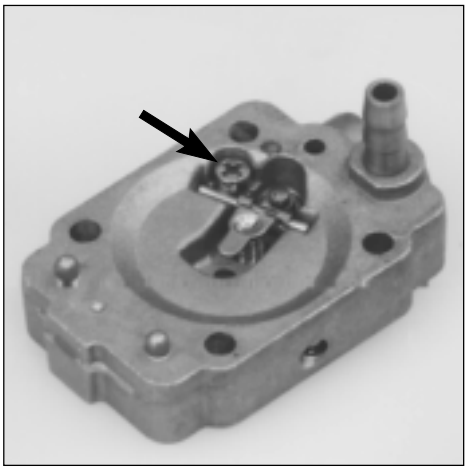
Remove the pump diaphragm and inspect for wear and damage.

Clean or replace the fuel screen (1).

Carefully remove the pump diaphragm and its gasket.

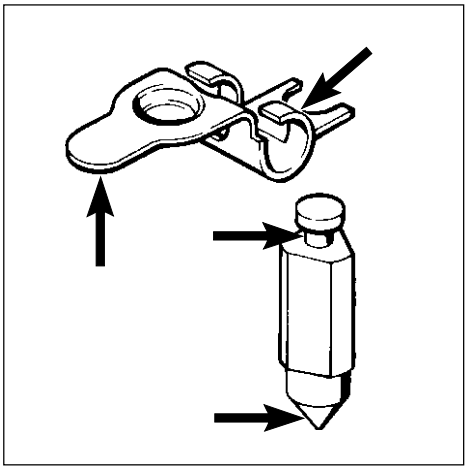
Check the pump diaphragm for wear to the valve flaps. Also hold it up to a light to check the material for holes.

Clean the fuel screen (1). Remove using a needle for replacement.



Dismantle the lever arm and needle valve to check for wear, replace if necessary.

Loosen the screw and lift off the lever arm, shaft, needle valve and spring.



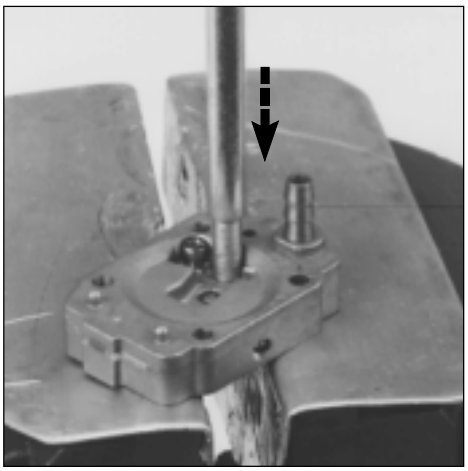
Check the lever arm and needle valve for wear.

Replace damaged components.

Check for wear to the lever arm on the points of contact on the control diaphragm and on the cut-out for the needle valve.

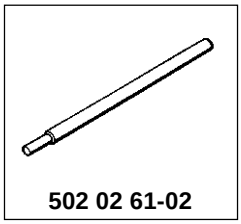
Also check for wear to the needle valve on the tip and groove for the lever arm.

Replace damaged components.



Replacing the needle valve seat.

Press out the needle valve seat for replacement.



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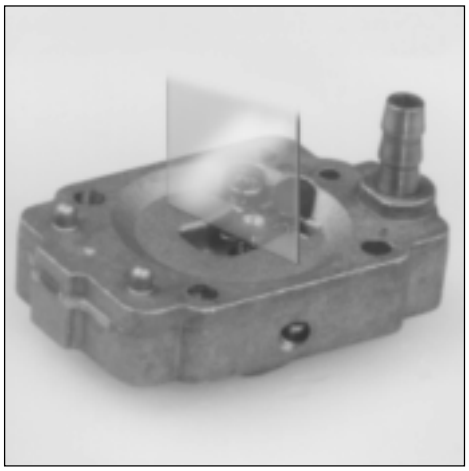
NOTE!

Replace the seat, needle valve and lever arm at the same time.

The needle valve seats should be level with the carburettor housing. Use a vice with soft jaw guards to avoid damaging the needle valve seat.



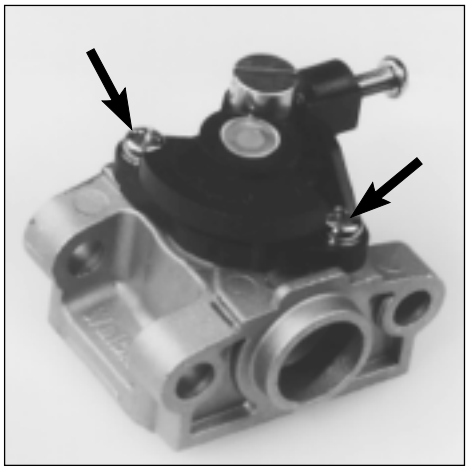
Check the position of the lever arm.

Assemble the components in the reverse order set out dismantling.

Check that the lever arm is level with the diaphragm housing.

Too high setting = too much fuel.

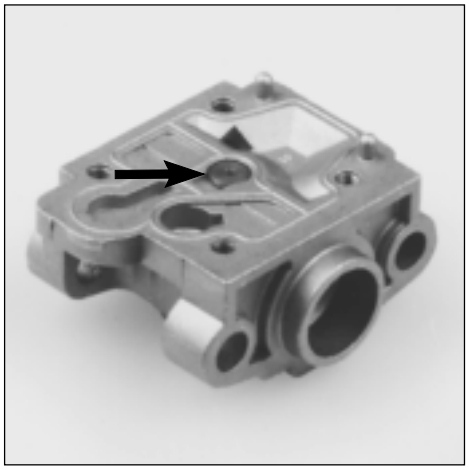
Too low setting = too little fuel.



Replace the entire throttle valve mechanism if the throttle pivot is worn.

The entire throttle vale mechanism can be lifted off for replacement once the two screws have been removed.

Note which way, e.g. the idling screw is facing so the new mechanism is positioned correctly.



Dismantle the main jet by prying it out of the carburettor housing using a small screwdriver.

The carburettor's main jet can be removed for replacement.

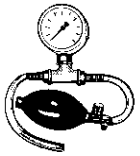
Use a small screwdriver to pry the main jet out of the carburettor housing.

Take care not to lose the small O-ring under the main jet.

NOTE!

Do not dismantle the plastic pipe in the throttle housing.

Assemble the carburettor and pressure test it.



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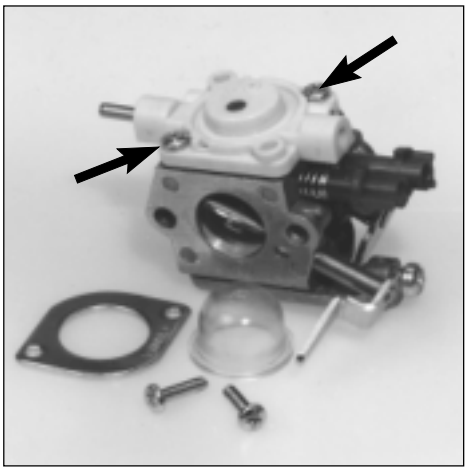
Assemble the carburettor in the reverse order set out for dismantling.

Check that the carburettor does not leak following the procedure described on page 46.



Dismantling, assembling Model 18H

The carburettor is made by Zama.

Dismantle the primer pump's bellows and cover over the control diaphragm.

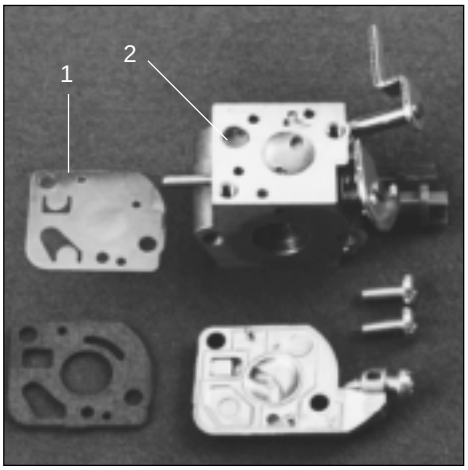
Dismantling, assembling Model 18H

The carburettor is made by Zama.

It has the same principle design as the Tillotson and Walbro carburettors.

Dismantle the primer pump's bellows and then the cover over the control diaphragm.

Inspect the control diaphragm and needle valve in the same way as previously described.



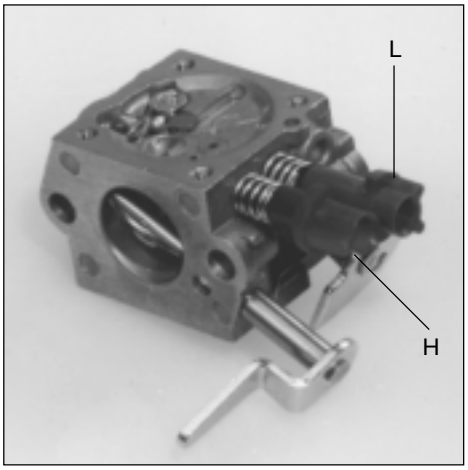
Dismantle the pump diaphragm and fuel screen.

Remove the screws holding the cover over the pump diaphragm.

Lift off the cover, pump diaphragm and gasket.

Check the diaphragm (1) in the same way as previously described.

Carefully remove the fuel screen (2) using, e.g. a needle.



Unscrew the jet needles.

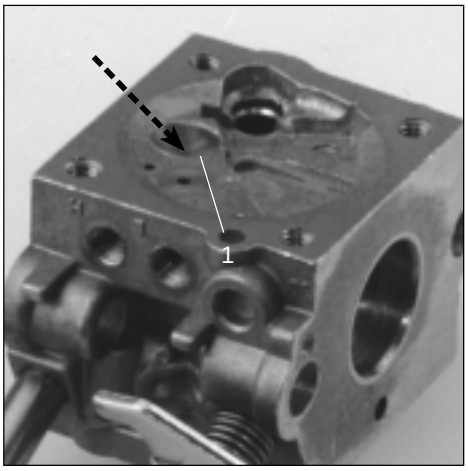
Unscrew the jet needles.

The plastic sleeves must first be removed using a screwdriver on carburettors with movement limiters.

NOTE!

Notice how the needles are positioned.

(For example, the H-needle is a little shorter than the L needle).

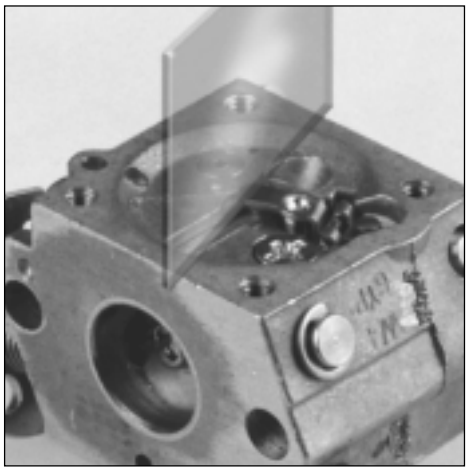


Press out the main jet for possible replacement using a suitable punch.

The main jet can be pressed out for possible replacement using a suitable punch.

NOTE!

When the new jet is fitted it must not be pressed in further than so that edge (1) on the jet lies flush with the carburettor housing.



Assemble the carburettor and pressure test it.

Wait to fit the movement limiters on the jet needles.

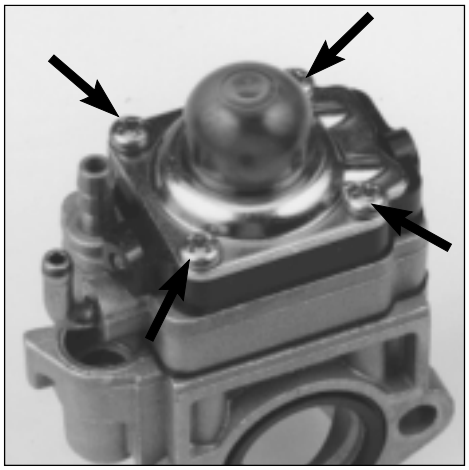
Assemble the carburettor in the reverse order as set out for dismantling.

The needle valve lever arm should be adjusted to a level flush with the carburettor housing's contact face.

NOTE!

The control diaphragm and pump diaphragm should lie closest to the carburettor housing!

Wait to fit the movement limiters on the jet needles.



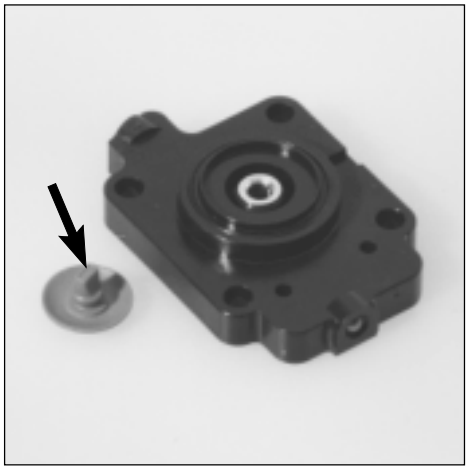
Dismantling, assembling
Model 141B

Remove the screws and lift off cover with the pump bellows.

Dismantling, assembling
Mod. 141B

This carburettor has a rotary valve instead of a throttle valve.

Remove the 4 screws and lift off cover with the pump bellows.



Lift off the cover above the control diaphragm and carefully remove the non–return valve. Check that it opens and closes.

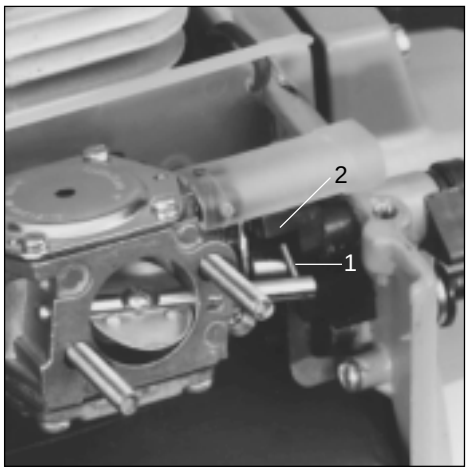
Continue to dismantle and assemble the carburettor in the same way as described for model 122 (page 53).

Lift off the cover over the control diaphragm.

Carefully remove the non-return valve and check that it opens and closes by pressing together the valve's short sides with you thumb nail.

Hold the valve against a light to make it easier to see whether it closes fully.

Continue to dismantle and assemble the carburettor in the same way as described for model 122 (page 53).



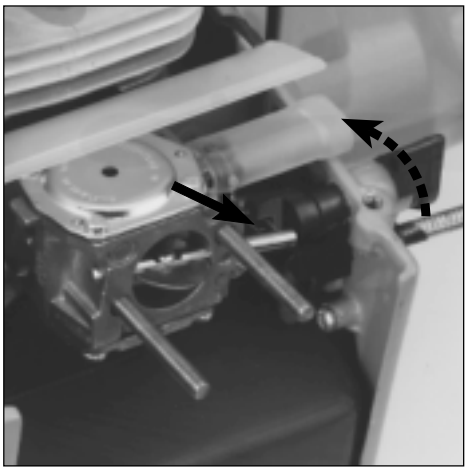
Assembly
Model 265

Fit the screwdriver guide over the jet screws and slide the carburettor in position over the studs.

Assembly
Model 265

Before the carburettor can be fitted on the cylinder the screwdriver guide should be placed over the jet screws.

Turn the choke lever to "CHOKE" and close the choke valve about 1/4. No more than so the pin (1) on the choke shaft can just bypass the choke lever's connector (2).

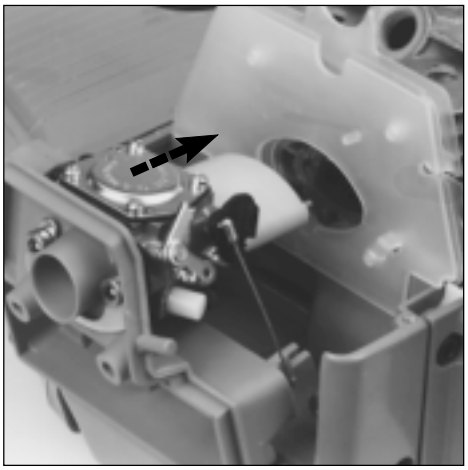


Check that the pin on the choke shaft goes in the groove on the choke lever's connector.

Connect the fuel pipe and fit the remaining components.

Slide the carburettor towards the cylinder at the same time as the choke lever is moved to the open position. Make sure the pin on the choke shaft goes in the groove on the choke lever's connector.

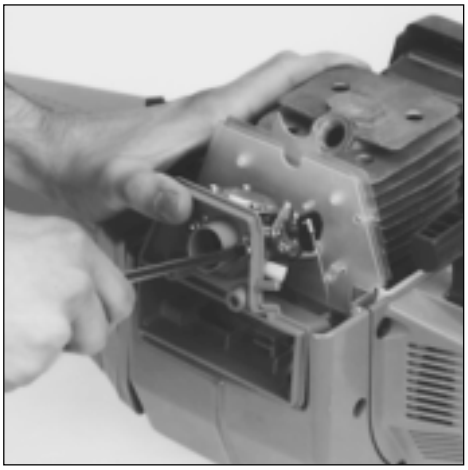
Connect the fuel pipe, fit the filter holder and the remaining components.



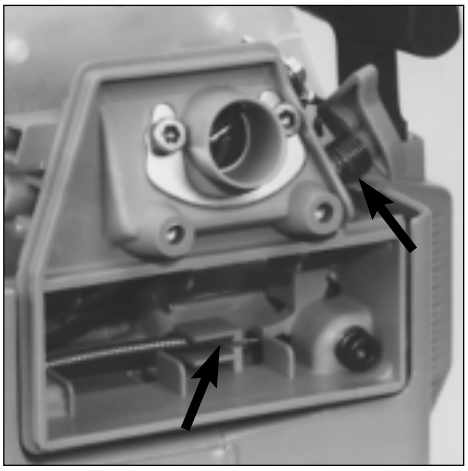
Model 250

Assembly sequence:

1. Secure the intake gasket on the cylinder.
2. Place the radiant heat guard on the crankcase.
3. Place the carburettor in the air filter holder and slide in the carburettor screws.
   Do not forget the U-shaped reinforcement plate.
4. Connect the throttle cable and fuel pipe.
5 Place the gasket in position on the carburettor. Check that it faces the right way so the pulse channel is not blocked.
6. Place the distance piece against the carburettor.
7. Fit the carburettor on the cylinder.



8. Press the carburettor against the cylinder using your thumb and carefully tighten the screws so that they do not cross thread.
9. Place the remaining two screws in the air filter holder.
10. Tighten all four screws.



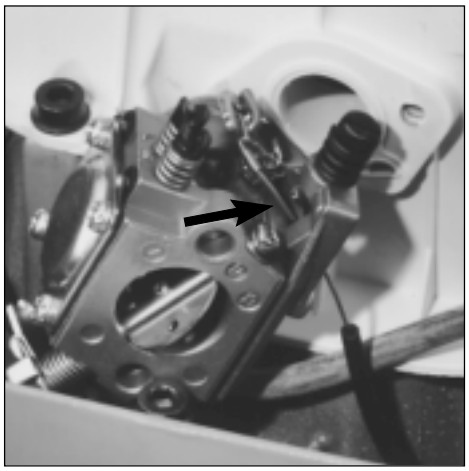
Check that the throttle cable seats correctly in the air filter cover.

Fit the choke lever.

Check that the throttle cable seats correctly in the air filter cover.

Apply a little grease to the bearing stud. Position the spring and fit the choke lever.

Check that the spring is capable of moving the valve back.



Models 240/245

Connect the fuel pipe and throttle cable.

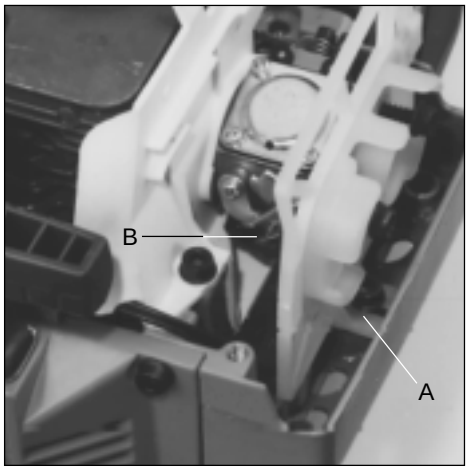
Models 240/245

First connect the fuel pipe to the carburettor and then fit the throttle cable.

Note the routing of the cable between the carburettor housing and the idling screw likewise the connection to the lever arm on the carburettor.

Secure the gasket on the carburettor with grease.

Check that it faces the right way; not blocking the pulse channel.



Position the choke lever in the air filter holder and fit the carburettor with the holder on to the cylinder.

Position the choke lever in the air filter holder and slide the carburettor screws through holes and the carburettor housing.

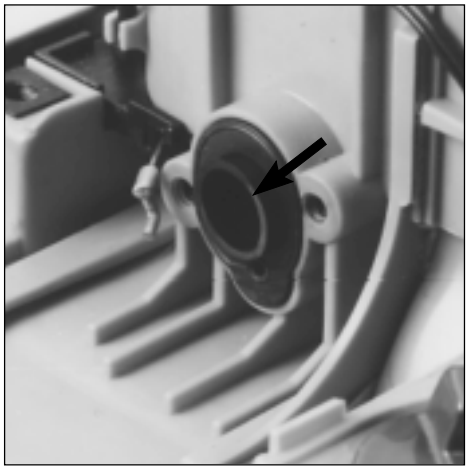
Position the slot in the air filter housing (A) under the screw in the crankcase.

NOTE!

The washer should be placed between the crankcase and the air filter holder.

Now tighten the screws.

Check that the choke lever grips in the groove (B) on the carburettor's choke lever arm.

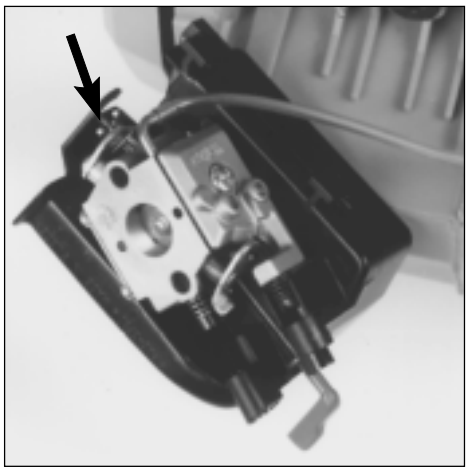


Model 225/232/235

Check that the plastic ring is in position in the inlet pipe.

Model 225/232/235

Check that the small plastic ring is in position in the elastic inlet pipe. This prevents the pipe from deforming.

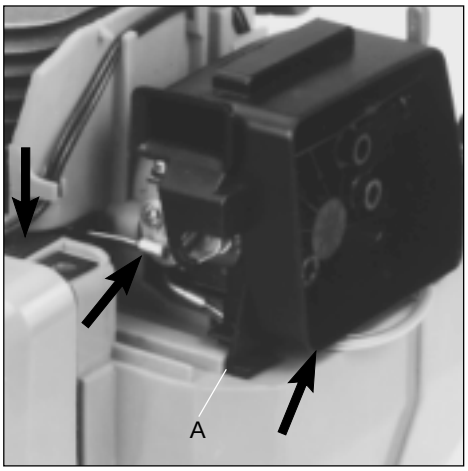


Place the choke lever and carburettor in position in the air filter cover.

Connect the fuel pipe.

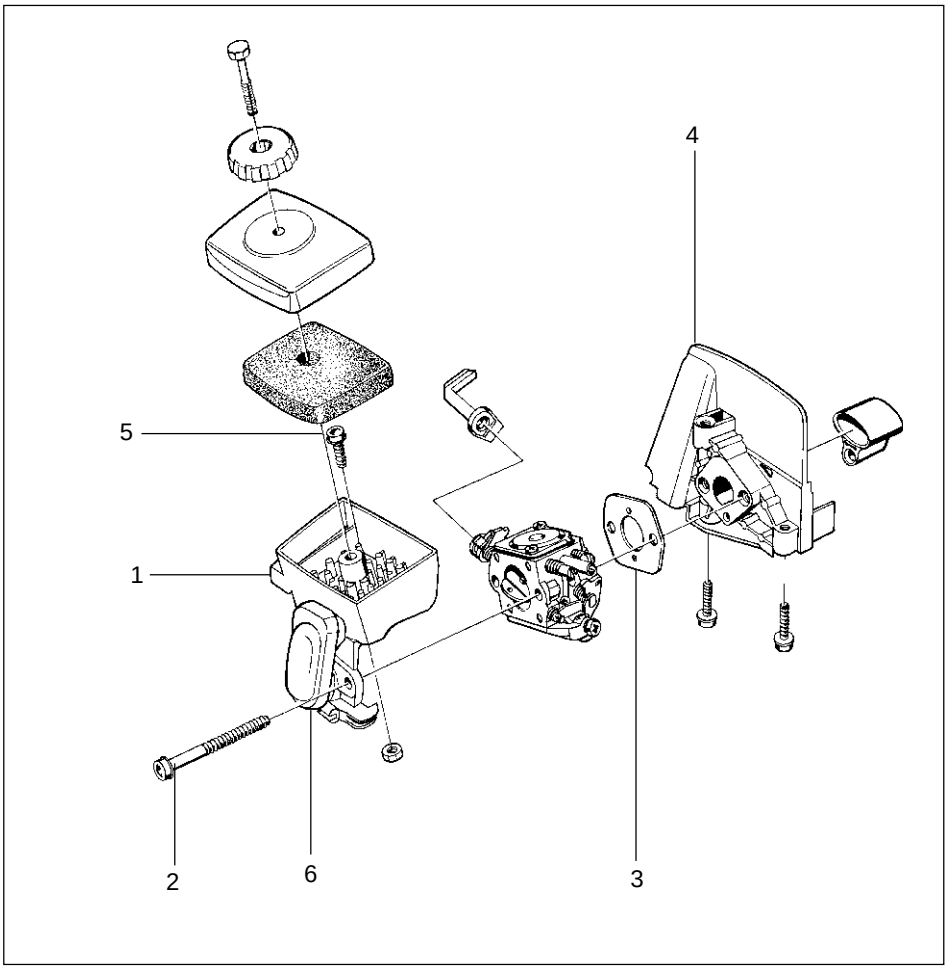
Position the choke lever in the air filter cover and then the carburettor. Check that the choke lever enters the groove on the carburettor's lever arm.

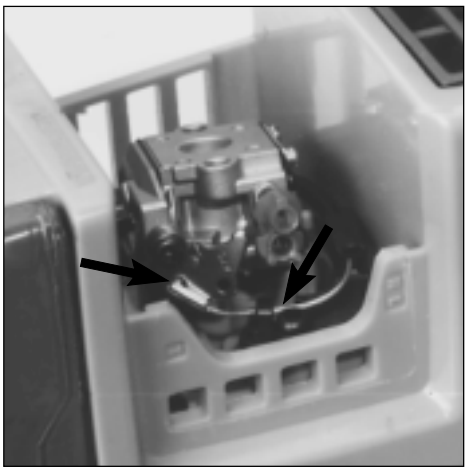
Connect the fuel pipe.



Connect the throttle cable and bolt on the carburettor.

Make sure the cable sits correctly in the cable guides.





Model 32

Position the carburettor gasket and connect the fuel pipe and throttle cable.

Slide the carburettor screws through the air filter holder and the carburettor.

Then connect the throttle cable and bolt the carburettor onto the cylinder. No gasket or gasket sealant is needed.

Make sure the cable sits correctly in the cable guides.

Make sure the fuel pipe is not crushed between the crankcase and air filter holder.

NOTE!

The air filter holder should be inserted into the guide (A) on the crankcase.

Models 322, 325

1. First assemble the fuel hoses on the carburettor.

NOTE!

The hose, with the fuel filter in the tank, should be fitted on the carburettor's inlet side (pump chamber).

2. Keep the air filter holder (1) in position on the carburettor.
3. Slide in the carburettor screws (2).
4. Position the gasket (3) and screw together the entire carburettor assembly against the distance piece (4). Tighten the carburettor screws crosswise.

NOTE!

Do not forget the screw (5) that holds the air filter holder against the distance piece.

5. Connect the throttle cable to the lever arm on the carburettor.

   Make sure the cable enters the correct slot in the clutch cover and in the guide on the air filter holder (6).

Assemble the remaining parts in the reverse order as set out for dismantling.

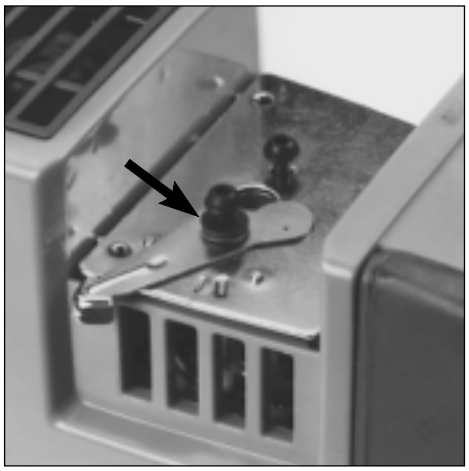
Model 32

Position the carburettor gasket on the crankcase.

Connect the fuel pipe and throttle cable to the carburettor.

NOTE!

Connect the cable in the right hole on the lever arm and ensure it pulls correctly.



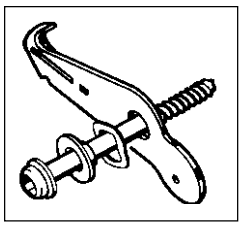
Position the carburettor and cover plate.

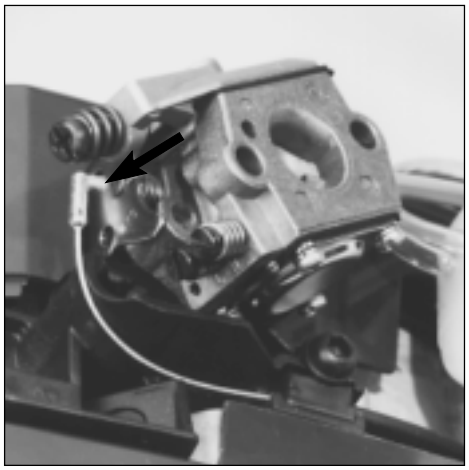
Fit the choke valve and tighten the carburettor screws.

Align the carburettor over the securing holes and position the cover plate.

Fit the carburettor screws, bear in mind the position of the curved washer and stop shoulder by choke valve. Turn the choke valve the right way!

Tighten the carburettor screws and fit the air filter.





Model Mondo

Connect the throttle cable.

Connect the fuel pipes.

Position the carburettor.

Model Mondo

- Connect the throttle cable to the throttle valve's lever arm.
- Connect the fuel pipes.

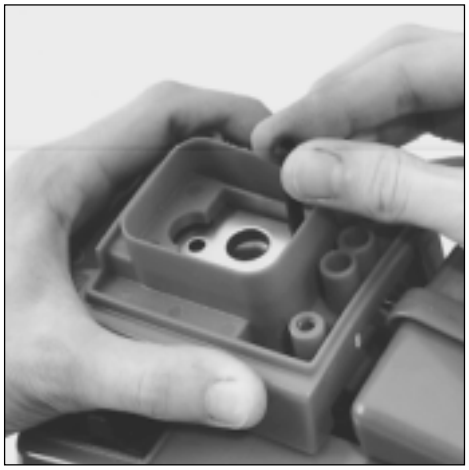
NOTE!

Select the right hole. See photo.

Make sure the fuel pipes are not mixed up. See photo on page 39.

Check that the intake gasket is placed correctly and position the carburettor.

Watch the routing of the throttle cable.



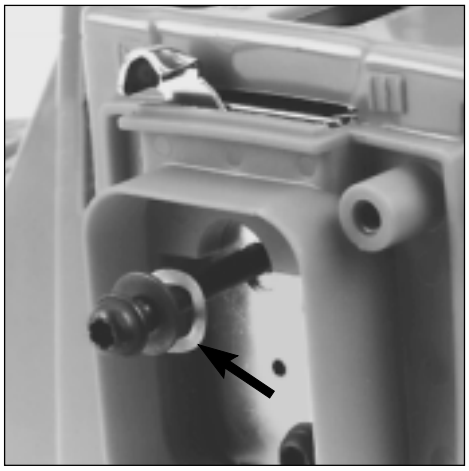
Hold the carburettor in place and fit the air filter holder and support plate with the lower screw.

Hold the carburettor in place.

Position the air filter holder with its support plate on the carburettor.

Guide the holder and carburettor by using the lower screw.

Check that the gasket has not moved.



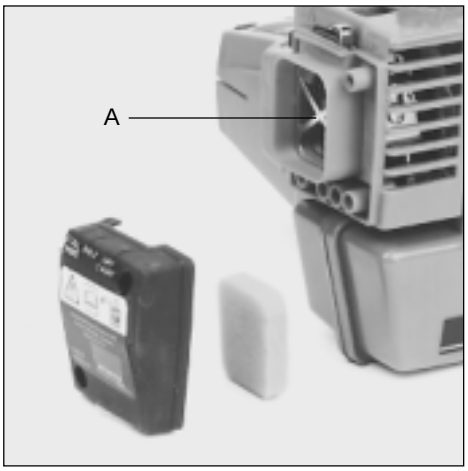
Fit the choke valve.

Place the choke valve in the air filter holder and tighten the screw.

NOTE!

The curved washer should rest against the valve.

Check that the stop sleeve is seated correctly in the hole in the valve and that it can be opened and closed without jamming.

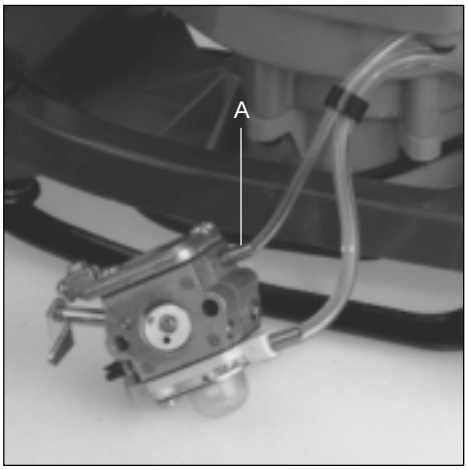


Fit the filter support (A), air filter and filter cover.

Clean/replace the air filter if necessary.

Fit the filter support (A). This must be used to prevent particles from the air filter being drawn into the carburettor.

Now fit the air filter (clean first in tepid, soapy water if necessary) and air filter cover.



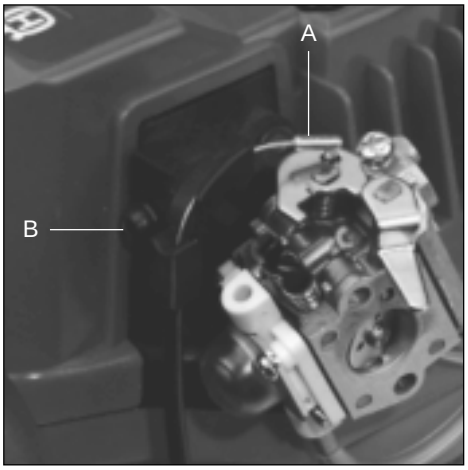
Model 18H

Connect the fuel hoses.

Model 18H

Connect the fuel hoses on the carburettor.

The thin hose (A) is connected to the nipple on the carburettor body (pump diaphragm).



Connect the throttle cable.

Tighten the air filter holder.

Clean or replace the air filter.

Connect the throttle cable (A) to the throttle valve's lever arm.

Secure the cable guide (B) on the distance piece.

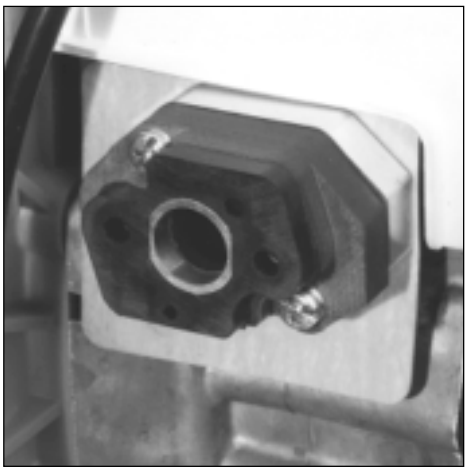
Tighten the air filter holder.

Do not forget the gasket between the carburettor and the distance piece!

Clean or replace the air filter before assembly.

Clean in tepid soapy water.

Fit the air filter cover.



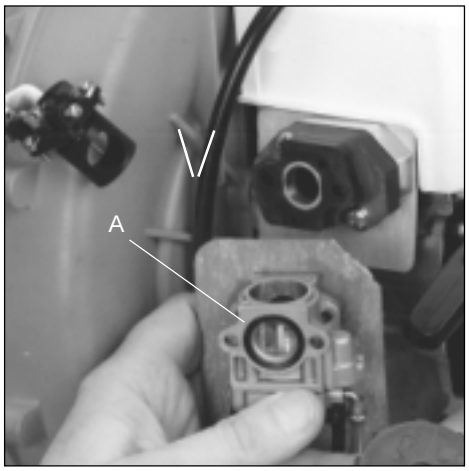
Model 141B

Fit the distance piece on the cylinder.

Model 141B

Pay special attention that the distance pieces and gaskets face the right way and do not block the impulse channel when fitted on the cylinder.

Secure the distance piece closest to the carburettor with a little grease. This facilitates carburettor assembly.



Turn the carburettor so that the recessed sealing ring (A) comes against the air filter holder.

Tighten the carburettor and air filter holder against the cylinder.

Slide down the rotary valve in the carburettor and screw on the cover.

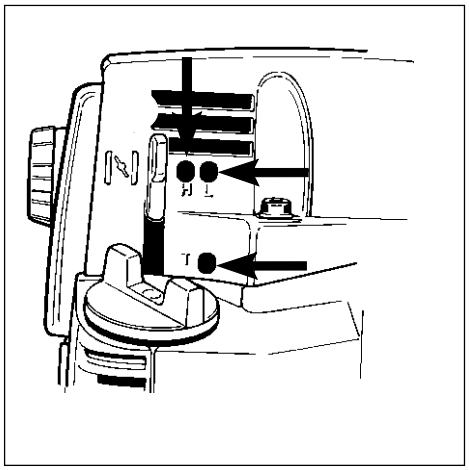
Check that the throttle works.

Turn the carburettor so that the recessed sealing ring (A) comes against the air filter holder.

Place the carburettor screws in the air filter holder (do not forget the choke valve) and then slide the carburettor on the screws.

Tighten the carburettor against the cylinder.

Slide down the rotary valve in the carburettor housing. Tighten the cover and check that the throttle is turned easily when accelerating and that it rests against the idling screw when the throttle is released.

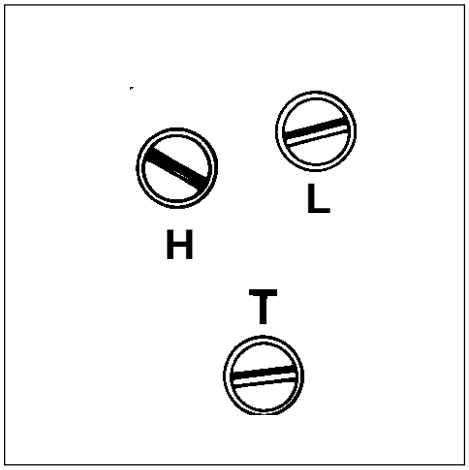


Carburettor settings

WARNING!

The clutch drum and driveline must, under all circumstances, be fitted when testing running the engine after adjusting the carburettor.

Otherwise there is a risk that the clutch can become detached and cause serious personal injury.



Function

The carburettor has the task of delivering a combustible air/fuel mixture to the cylinder.

The amount of mixture is controlled by the throttle.

The mixture's composition of petrol and air is controlled by using the adjustable needles ”H” and ”L”.

The needles must be correctly adjusted so that the engine can give maximum power at different speed, run smoothly when idling and react quickly when accelerating.

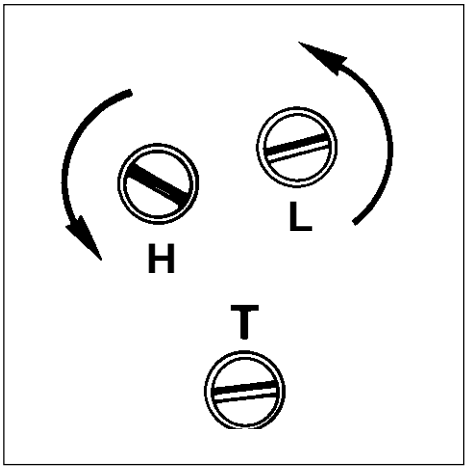
The carburettor setting can vary a little depending on the humidity, temperature and air pressure.

L = Low speed needle

H = High speed needle

T = Idle speed adjuster screw

- The fuel quantity in relation to the air flow permitted by the throttle opening is adjusted by the L and H needles. Turning the needles clockwise gives a leaner fuel mixture (less fuel) and turning them anticlockwise gives a richer fuel mixture (more fuel). A *leaner* mixture gives *higher* revs while a *richer* mixture gives *less* revs.
- The T-screw regulates the position of the throttle while the engine is idling. Turning the screw clockwise gives a higher idling speed while turning it anticlockwise gives a lower idling speed.



Basic setting

The carburettor is set to its basic setting when test run at the factory. The basic setting is ”richer” than the optimal setting (the max speed is 600–800 rpm under the recommended max. speed) and should be kept during the engine's first working hours. Thereafter the carburettor should be finely adjusted. The basic setting can vary between:

H = 1 to 1 1/4 turns (model 235 P: 3/4 – 1 turn, Mondo + Mega + Max, 18 H: 2 turns, 322, 325: 2 1/2 turns)

L = 1 to 1 1/4 turns (model 235 P: 3/4 – 1 turn, Mondo + Mega + Max, 18H: 2 turns)

Basic setting model 235 P

The pruner's engine can not be revved to the max speed as the cutting head's blades go against the stop and the engine slows. Consequently, the engine revs at max under load. The high speed needle H should not be changed from the basic settings (3/4 – 1 turns open). If the muffler smokes heavily, at the same time as the engine 4 strokes a great deal the setting is too rich. Turn the H needle clockwise until you find the setting that sounds right.

Fine adjustment

Fine adjustment of the carburettor should be carried out after the engine has been ”run-in”.

- The air filter should be clean and the cylinder cover fitted when adjustments are made.

  First adjust the L needle, then the H needle and finally the idling speed's T-screw.

  The following speed recommendations apply:

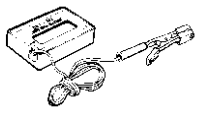
  Idling speed = 2,500 rpm.

Max speed

Model	During running in	After running in
265	10,900	11,500
252, 250 RX (R)	12,900 (11,900)	13,500 (12,500)
240	11,900	12,500
245	11,900	12,500
225	10,500	11,000
232	10,300	10,800
235	10.500	11,000
240 RBD	10,500	11,000
322, 325	12,500	12,500
122		10,800
32		7,000
Mondo		9,000
Mega / Max		9,000
250PS	11,000	11,500
235 P	—	—
225 H60 / H75	10,500	11,000
18H	9,500	10,000
132HBV	7,100	7,600
140B / 141B		
225HBV	7,700	8,200

NOTE!

The max. recommended speed must not be exceeded.

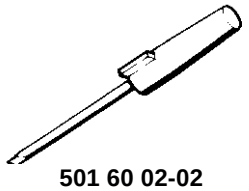


502 71 14-01

The max. recommended speed must not be exceeded.

When checking the speed on a trimmer no part of the cord should be extended.

Check the speed using the tachometer 502 71 14-01.



501 60 02-02

- Carefully screw in (clockwise) the L and H needles until they bottom. Screw out (anticlockwise) the needle 1 turn. The carburettor is now set H = 1 and L = 1. Use the special screwdriver 501 60 02-02.
- Start the engine and run warm for 10 minutes.

NOTE!

If the cutting equipment rotates while idling the T-screw should be turned anticlockwise until it stops.

Low speed needle L

Find the highest idling speed by slowly turning the low speed needle clockwise and anticlockwise. When the highest speed has been found, turn the L needle 1/4 turn anticlockwise.

High speed needle H

The high speed needle H affects the engine's power and speed. A too lean H needle setting (H needle screwed in too far) gives too little fuel to the engine resulting in damage to the engine.

Run the engine at full throttle for about 10 seconds. The H needle is set correctly when the engine ”splatters” a little.

If the muffler smokes heavily, at the same time as the engine splatters a great deal the setting is too rich. Turn the H needle clockwise until you find the setting that sounds right.

NOTE!

A tachometer should always be used to find the optimal setting.
The recommended max. speed must not be exceeded.

Idling speed T-screw

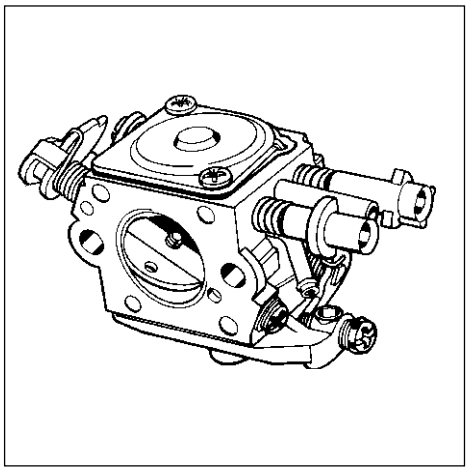
Let the engine idle for about 30 seconds or until the speed has stabilised. Adjust the idling speed T-screw until the engine idles without stopping.

- Turn the screw clockwise if the engine stops.
- Turn the speed anticlockwise to lower the speed.

Correctly adjusted carburettor

A correctly adjusted carburettor means that the engine accelerates without hesitation and it 4 strokes a little at full throttle.

- A too lean adjusted L needle can cause starting difficulties and bad acceleration.
- A too lean adjusted H needle results in lower power, bad acceleration and/or damage to the engine.
- A too rich setting of the "L" and "H" needles give acceleration problems or a too low working speed.



Carburettors in E-TECH and CARB-EPA designs (CARB-EPA only applies to USA)

On these types of carburettor the H and L needles can be adjusted within extremely tight limits, to among others, comply with the stringent demands with regard to the hydrocarbon and nitrogen oxide content in the exhaust fumes.

The carburettor needles on these carburettors are fitted with plastic sleeves with movement limiters

To carry out adjustment when replacing needles or the entire carburettor the engine must be under load. This is achieved by fitting a Trimmy Fix with the specified length and diameter of trimmer cord. Consequently, the stated speed will be much lower that with "normal" carburettor adjustment when the motor may run freely.

After replacing the needles or the entire carburettor on a CARB-EPA approved engine, adjustment must be carried out according to the instructions below.

The combiguard or trim guard must be fitted when adjusting the H-needle.

After replacing the complete carburettor

1. Check that the plastic sleeve on the H needle is turned as far as possible anticlockwise (richest fuel mixture). The sleeve sits freely on the needle and can be turned without affecting the needle's setting.

   Do not change the L needle setting. This is adjusted at the factory and the plastic sleeve is already fixed on the needle.
2. Fit four trimmer cords Ø 3.3 mm on a Trimmy Fix.

   (Trimmy Fix M10, 531 00 38-69 for models 225, 232, 322L, 322R, 325L, 325L-X, 325R-X. Trimmy Fix M12, 502 13 87-02 for model 235).

   Maybe the hole needs to be enlarged a little to make fitting the trimmer cords easier.

   (Does not apply to Models 225H60/H75).
3. Cut the trimmer cord to the right length (measure the length to the edge of the Trimmy Fix).

   Model 225: 145 mm

   Model 232: 155 mm

   Model 235: 170 mm

   Models 322L/R, 325L/L-X/R-X: 142 mm

   Montera Trimmy Fix på maskinen.

   Model 322C must be run with Trimmy Hit VI and its standard cord (Ø 2.0 mm). Cut off the cord ends so that they are 146 mm long.

   (Does not apply to model 225H60/H75 and 18H).

NOTE!

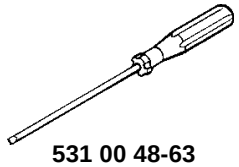
The spray guard must be removed from model 235. Exercise care when the trimmer cord is rotating.

4. Start the engine. Adjust the idling speed T screw if necessary.
5. Use screwdriver 531 00 48-63 to adjust the H needle. The blade is 2 mm wide and goes through the plastic sleeve and only adjusts the needle.

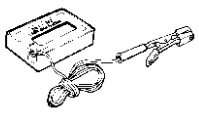
   Adjust the H needle so that the max. speed 8400 ± 200 rpm is set.

   Use the tachometer 502 71 14-01 to check the speed.

   (Does not apply to model 225H60/H75 and 18H).



531 00 48-63



502 71 14-01

6. Run the engine warm for 2–3 minutes.
7. Check that the max speed is still 8400 ± 200 rpm. Adjust the H needle if necessary.
8. Check that the plastic sleeve on the H needle is still turned as far as possible anticlockwise (richest fuel mixture).
9. Press in the plastic sleeve using a punch (Ø 5 mm).

The basic setting of the carburettor is now complete. Further fine adjustment, within the limits that the plastic sleeves on the needles permit, can be necessary.

Deviations for models 225H60/H75, 18H:

5A. Adjust the H needle until the max speed is reached.

   Then turn the needle anticlockwise until the speed drops by 500 rpm.

6A. Run the engine warm at full throttle for 2–3 min.

7A. Check the idling speed and that the engine reacts quickly when accelerating.

7B. Adjust the H needle so that the max. speed is reached. Then turn the needle anticlockwise until the speed drops by 500 rpm.

After replacing only the H needle

1. Turn the L needle as far as possible anticlockwise (richest fuel mixture).
2. Remove the plastic sleeve on the H needle and unscrew the needle.
3. Carefully screw the new H-needle to the bottom and then loosen it 1/2 turn. On model 322/325 the needle should be loosened approx. 2 1/2 turns.
4. Press a new plastic sleeve on the H needle down to the first stop. The sleeve can now be turned without turning the needle.
5. Turn the plastic sleeve as far as possible anticlockwise (richest fuel mixture) without turning the needle.
6. Fit four trimmer cords Ø 3.3 mm on a Trimmy Fix.

   (Trimmy Fix M10, 531 00 38-69 for models 225, 232, 322L, 322R, 325L, 325L-X, 325R-X. Trimmy Fix M12, 502 13 87-02 for model 235).

   Maybe the hole needs to be enlarged a little to make fitting the trimmer cords easier.

   (Does not apply to model 225H60/H75 and 18H).
7. Cut the trimmer cord to the right length (measure the length to the edge of the Trimmy Fix).

   Model 225: 145 mm Model 232: 155 mm

   Model 235: 170 mm Models 322L/R, 325L/L-X/R-X: 142 mm

   Fit the Trimmy Fix on the machine.

   Model 322C must be run with Trimmy Hit VI and its standard cord (Ø 2.0 mm). Cut off the cord ends so that they are 146 mm long.

   (Does not apply to model 225H60/H75 and 18H).

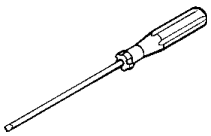
NOTE!
The spray guard must be removed from model 235. Exercise care when the trimmer cord is rotating.

8. Start the engine. Adjust the idling speed T screw if necessary.
9. Use screwdriver 531 00 48-63 to adjust the H needle. The blade is 2 mm wide and goes through the plastic sleeve and only adjusts the needle.

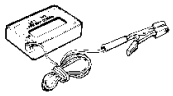
   Adjust the H needle so that the max. speed 8400 ± 200 rpm is set.

   Use the tachometer 502 71 14-01 to check the speed.

   (Does not apply to model 225H60/H75 and 18H).



531 00 48-63



502 71 14-01

10. Run the engine warm for 2–3 minutes.
11. Check that the max speed is still 8400 ± 200 rpm. Adjust the H needle if necessary.
12. Check that the plastic sleeve on the H needle is still turned as far as possible anticlockwise (richest fuel mixture).
13. Press in the plastic sleeve using a punch (Ø 5 mm).

The basic setting of the carburettor is now complete. Further fine adjustment, within the limits that the plastic sleeves on the needles permit, can be necessary.

Deviations for models 225H60/H75, 18H:

9A. Adjust the H needle until the max speed is reached.

Then turn the needle anticlockwise until the speed drops by 500 rpm.

10A. Run the engine warm at full throttle for 2–3 min.

11A. Check the idling speed and that the engine reacts quickly when accelerating.

11B. Adjust the H needle so that the max. speed is reached. Then turn the needle anticlockwise until the speed drops by 500 rpm.

After replacing the H and L needles

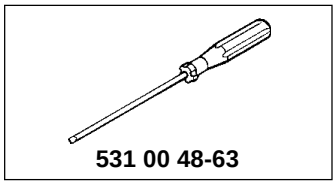
1. Remove the plastic sleeves from both needles and screw out the needles.
2. Carefully screw the new needles in until they bottom.

   Now screw out the L-needle 2 turns. On models 322/325 the needle should be screwed out approx. 1 turn.

   Now screw out the H-needle 1/2 turns. On models 322/325 the needle should be screwed out approx. 2 1/2 turns.
3. Press the new plastic sleeves on the needles until the first stop. The sleeves can still be turned without the needles turning.
4. Turn the plastic sleeve on the L needle as far as possible clockwise (leanest fuel mixture).
5. Start the engine and let it idle.
6. Use the screwdriver 531 00 48-63 to adjust the L needle. The blade is 2 mm wide and goes through the plastic sleeve and only adjusts the needle.

   Adjust the L needle so that the highest idling speed is obtained.

   Use the tachometer 502 71 14-01 to check the speed.
7. Check that the plastic sleeve on the L needle is still turned as far as possible clockwise (leanest fuel mixture).



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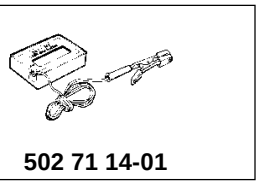


502 71 14-01

8. Press the plastic sleeve on the L needle using a punch (Ø 5 mm).

   Now turn the L needle as far as possible anticlockwise (richest fuel mixture).
9. Turn the plastic sleeve on the H needle as far as possible anticlockwise (richest fuel mixture).
10. Fit four trimmer cords Ø 3.3 mm on a Trimmy Fix.

    (Trimmy Fix M10, 531 00 38-69 for models 225, 232, 322L, 322R, 325L, 325L-X, 325R-X. Trimmy Fix M12, 502 13 87-02 for model 235).

    Maybe the hole needs to be enlarged a little to make fitting the trimmer cords easier.

    (Does not apply to model 225H60/H75 and 18H).
11. Cut the trimmer cord to the right length (measure the length to the edge of the Trimmy Fix).

    Model 225: 145 mm Model 232: 155 mm

    Model 235: 170 mm

    Model 322L/R, 325L/L-X/R-X: 142 mm

    Fit the Trimmy Fix on the machine.

    Model 322C must be run with Trimmy Hit VI and its standard cord (Ø 2.0 mm). Cut off the cord ends so that they are 146 mm long.

    (Does not apply to model 225H60/H75 and 18H).

NOTE!
The spray guard must be removed from model 235. Exercise care when the trimmer cord is rotating.

12. Start the engine. Adjust the idling speed T screw if necessary.
13. Use screwdriver 531 00 48-63 to adjust the H needle. The blade is 2 mm wide and goes through the plastic sleeve and only adjusts the needle.

    Adjust the H needle so that the max. speed 8400 ± 200 rpm is set.

    Use the tachometer 502 71 14-01 to check the speed.

    (Does not apply to model 225H60/H75).
14. Run the engine warm for 2–3 minutes.
15. Check that the max speed is still 8400 ± 200 rpm. Adjust the H needle if necessary.
16. Check that the plastic sleeve on the H needle is still turned anticlockwise as far as possible (richest fuel mixture).
17. Press in the plastic sleeve using a punch (Ø 5 mm).

The basic setting of the carburettor is now complete. Further fine adjustment, within the limits that the plastic sleeves on the needles permit, can be necessary.

Deviations for models 225H60/H75, 18H:

13A. Adjust the H needle until the max speed is reached.

Then turn the needle anticlockwise until the speed drops by 500 rpm.

14A. Run the engine warm at full throttle for 2–3 min.

15A. Check the idling speed and that the engine reacts quickly when accelerating.

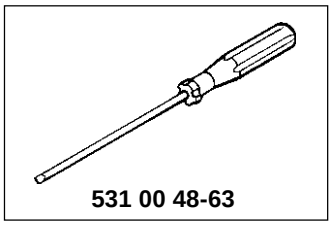
15B. Adjust the H needle so that the max. speed is reached. Then turn the needle anticlockwise until the speed drops by 500 rpm.

Replacing only the L needle

1. Turn the H needle as far as possible clockwise (leanest fuel mixture).
2. Remove the plastic sleeve on the L needle and unscrew the needle.
3. Carefully screw the new L-needle to the bottom and then loosen it 2 turns. On models 322/325 unscrew the needle 1 turn.
4. Press a new plastic sleeve on the L needle down to the first stop. The sleeve can now be turned without turning the needle.
5. Turn the plastic sleeve as far as possible clockwise (leanest fuel mixture).
6. Start the engine and let it idle.
7. Use the screwdriver 531 00 48-63 to adjust the L needle. The blade is 2 mm wide and goes through the plastic sleeve and only adjusts the needle.

   Adjust the L needle so that the highest idling speed is obtained.

   Use the tachometer 502 71 14-01 to check the speed.



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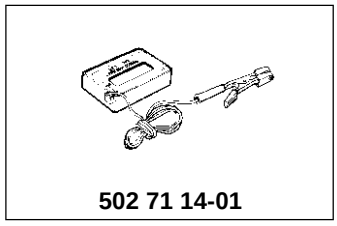
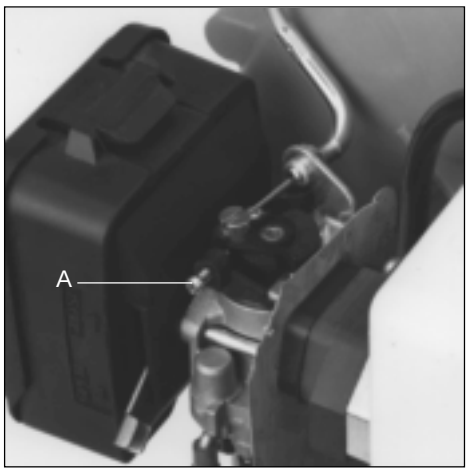


502 71 14-01

8. Check that the plastic sleeve on the L needle is still turned as far as possible clockwise (leanest fuel mixture).
9. Press the plastic sleeve on the L needle using a punch (Ø 5 mm).

The basic setting of the carburettor is now complete. Further fine adjustment, within the limits that the plastic sleeves on the needles permit, can be necessary.



Model 141B

Only the idling speed can be adjusted on this model.

The idling speed should be approx. 2,500 rpm.

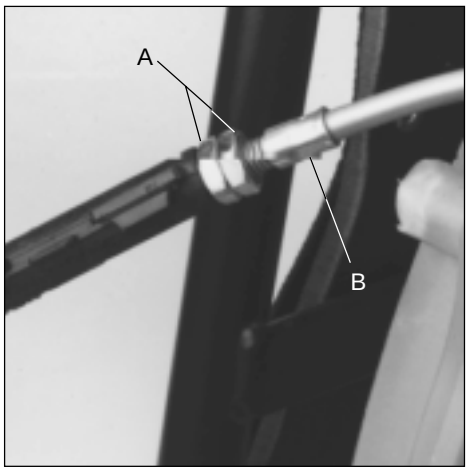
Model 141B

The carburettor on this model has no adjustable needles.

Only the idling speed can be adjusted with screw (A).

The right speed is approx. 2,500 rpm

Adjust the idling speed when the engine is warm and has a clean air filter.

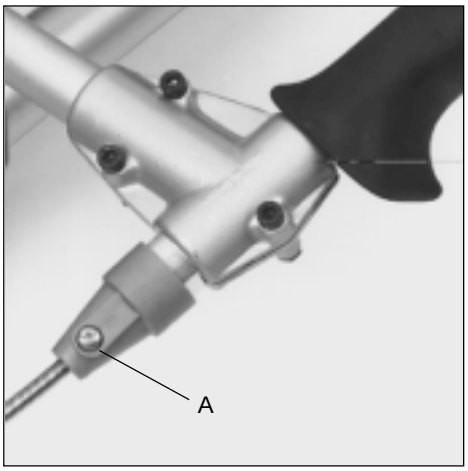


Check that the throttle cable has 0.5 – 1 mm of play.

When the throttle is in the idling position the throttle cable must have 0.5 – 1 mm of play.

Adjust the play by first loosening both locking nuts (A) and then turning the adjuster screw (B). The play is increased when the screw is screwed inwards and decreases when screwed outwards.

Tighten the locking nuts against each other after adjusting.



Throttle
Model 265

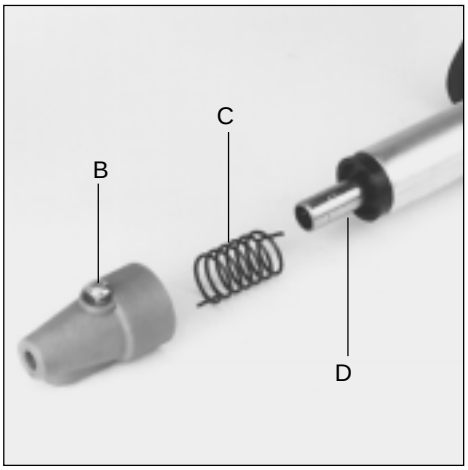
Dismantle the throttle cable.

Lift off the throttle.

Throttle
Model 265

Loosen the locking screw (A) and pull out the throttle cable.

Remove the three screws that hold the throttle on the handle and lift off the grip and the two clamp halves.



Loosen the locking screw (B) and dismantle the throttle.

Loosen the locking screw (B).

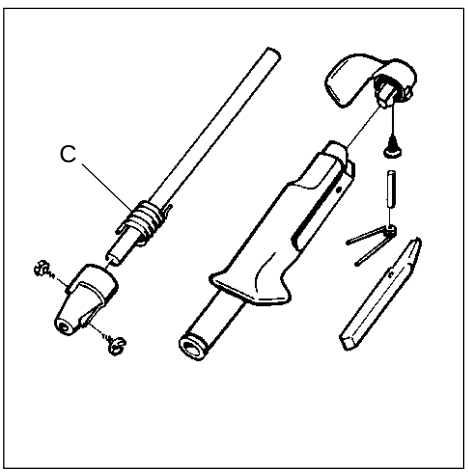
The return spring (C) is now accessible and the throttle control (D) with its shaft can be pulled from the throttle.

Press out the bearing pin from the throttle lock using a punch.

Replace damaged parts and reassemble in the reverse order set out for dismantling.

Fold back the rubber handle and press out the bearing pin using a punch.

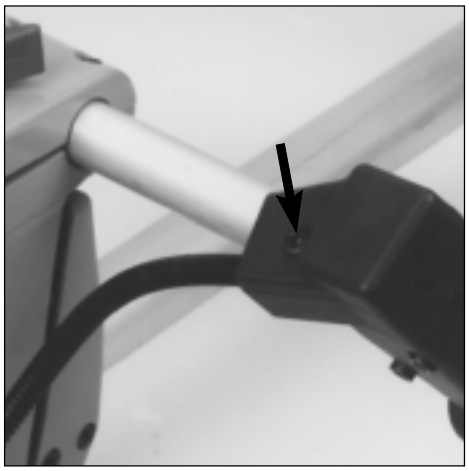
The spring and throttle lock are now accessible for replacement.



Reassembly of the throttle takes place in the reverse order set out for dismantling.

Reassembly of the throttle takes place in the reverse order set out for dismantling.

Tension the spring (C) about 1/4 – 1/2 turn.



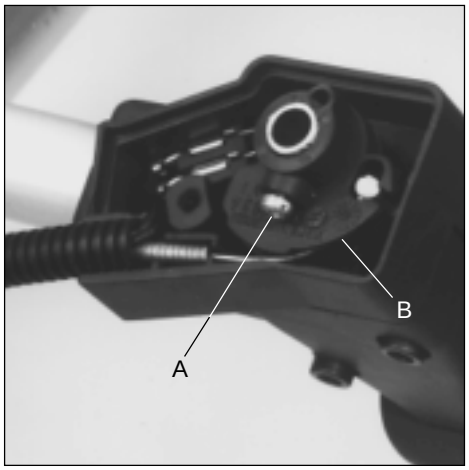
Model 250

Remove the screw and cover.

Model 250

Fold down the handle for better accessibility.

Remove the screw and cover over the throttle cable's and the short circuit cable's connection in the handle.



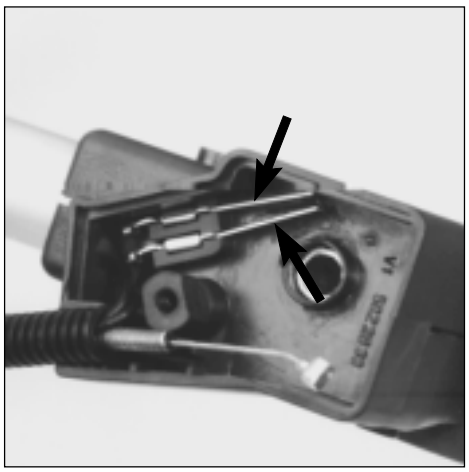
Loosen the screw (A) and lift out the connection piece (B) and the return spring.

Loosen the screw (A) and lift out the throttle cable's connection piece (B) and the return spring.

NOTE!

There is some tension on the spring.

The throttle's shaft can now be removed for replacement.



Dismantle the short circuit cable's contact strips for inspection and possible replacement.

Lift out the short circuit cable's contact strips using flat nose pliers.

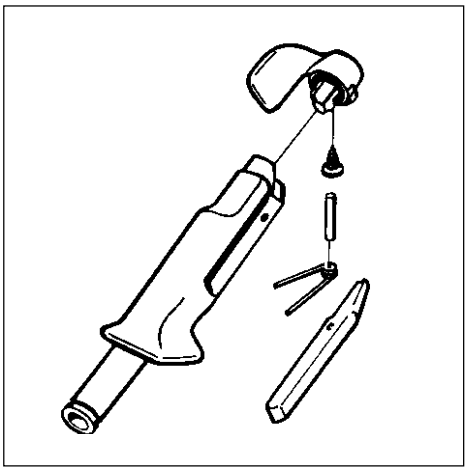
Check the contact surface on the strips replace or clean them if they are corroded or burnt.

Press out the bearing pin from the throttle lock using a punch.

Replace damaged parts and reassemble in the reverse order set out for dismantling.

Fold back the rubber handle and press out the bearing pin using a punch.

The spring and throttle lock are now accessible for replacement.



Reassembly of the throttle takes place in the reverse order set out for dismantling.

Reassembly of the throttle takes place in the reverse order set out for dismantling.

Lubricate with a little grease, preferably cold resistant.

- Lubricate the throttle control shaft with a little grease and slide it in the bearing housing.
- Position the return spring and check that it enters the hole in the bearing housing.
- Place the throttle cable's connection piece in position and also check here that the spring enters the hole.
- Connect the throttle cable.
- Press the throttle cable's connection piece down over the shaft.
- Make sure the throttle is in the idling position.
- Tension the throttle cable by turning the connection piece to the position when the throttle valve just starts to move.
- Tighten the screw and check that the throttle also functions as intended in the stop position.

Models 225HBV, 225R, 232R, 235R, 245R, 250R

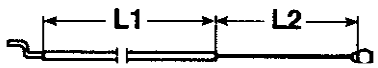
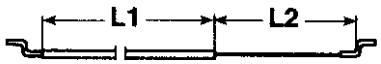
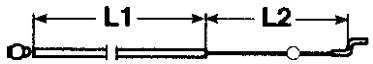
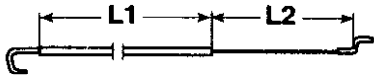
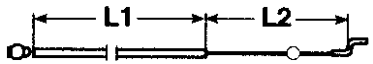
Dismantle the throttle from the handle and remove the screws that hold together the two halves of the throttle grip.

Carefully separate the two halves.

Replace any damaged parts.

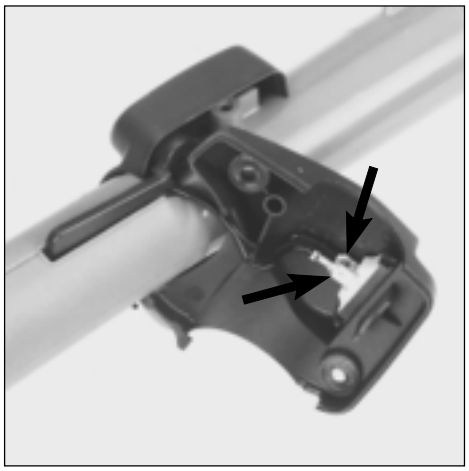
Check when reassembling that the guide pin (A) enters the hole in the throttle lock (B), and that the lock functions without jamming when both throttle halves have been screwed together.

Throttle cable

Model		Order no.	L1 casing mm	L2 cable protrude mm	Serial no.	Nipples	Remarks
250R	– 1993	502 27 29-01	1000 ±5	120 ±1			Index finger throttle 502 28 06-01. The throttle cable runs under the engine. Steel casing.
250R	1994 –	502 27 29-06	965 ±5	162 ±1			Index finger throttle 502 28 06-01. Steel casing on cables replaced by 502 27 93-03.
250R	– 1996	502 27 93-03	965 ±2	152 ±1	>6520029		Index finger throttle 502 28 06-01. Brown Teflon casing.
250R	1997 –	502 27 93-04	640 ±2	115 ±1	>7180059		Index finger throttle 502 28 06-01. Brown Teflon casing. The cable runs through the crankcase. Replaced by 537 03 71-02 and 537 02 42-02
250R	1998 –	537 03 71-02	640 ±2	115 ±1	>8500001		Index finger throttle 502 28 06-01. Black plastic casing. Cable Ø 0.9. Kit with air filter holder and rubber bellows.
250R	1998 –	537 02 42-02	640 ±2	115 ±1	>8500001		Index finger throttle 502 28 06-01. Black plastic casing. Cable Ø 0.9.
250RX	1995–	502 27 29-07	795 ±5	133 ±1			Thumb throttle 502 28 37-01. Steel casing replaced by 502 28 60-03.
250RX	1996 –	502 28 60-03	810 ±2	116 ±1	>6450153		Thumb throttle 502 28 37-01. Brown Teflon casing.
250RX	– 1997	502 28 60-06	810 ±2	116 ±1			Thumb throttle 502 28 37-01. Brown Teflon casing. Cable Ø 0.9.
250RX 252RX	1997 – 1997 –	502 28 60-04	840 ±2	80 ±1	>7170157		Thumb throttle 502 28 37-01. Brown Teflon casing. The cable runs through the crankcase. Replaced by 502 28 60-05.
250RX 252RX	1997– 1997 –	502 28 60-05	840 ±2	80 ±1	>7420190 >7430001		Thumb throttle 502 28 37-01. Brown Teflon casing. The cable runs through the crankcase. Cable Ø 0.9. Replaced by 537 03 71-01 and 537 02 42-01.
252RX	1998 –	537 03 71-01	840 ±2	80 ±1	>8450073		Thumb throttle 502 28 37-01. Black plastic casing. Cable Ø 0.9. Kit with air filter holder and rubber bellows.
252RX	1998 –	537 02 42-01	840 ±2	80 ±1	>8450073		Thumb throttle 502 28 37-01. Black plastic casing. Cable Ø 0.9.

Throttle cable

Model		Order no.	L1 casing mm	L2 cable protrude mm	Serial no.	Nipples	Remarks
39R	– 1988	502 11 82-01	916 ±1	67 ±5			Index finger throttle 502 12 18-03
240/245R	– 1994	502 11 82-01	916 ±1	67 ±5			Index finger throttle with throttle lock 502 12 18-03
240/245R	1994 –	502 27 93-01	895 ±2	95 ±1	>4110001		Index finger throttle 502 28 06-01
245RX	– 1994	502 11 82-02	792 ±1	67 ±5			Index finger throttle 502 12 18-03
245RX	1994 –	502 27 93-02	795 ±2	97 ±1	>411001		Index finger throttle 502 28 06-01
245RX	1995 –	502 28 60-01	700 ±2	61 ±1	>5510267		Thumb throttle 502 28 37-01. Brown Teflon casing. Replaced by 502 28 60-08.
245RX	1997 –	502 28 60-08	700 ±2	61 ±1			Thumb throttle 502 28 37-01. Brown Teflon casing. Cable Ø 0.9.



Models 225 L, E, 232 L

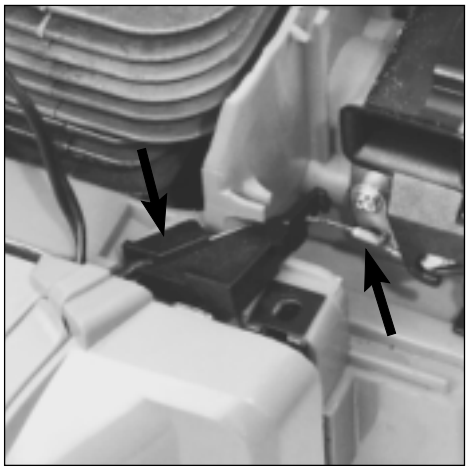
Remove the screws.

Disconnect the cables from the stop switch.

Models 225 L, E, 232 L

Remove both the screws that hold the throttle halves together.

Fold back the right half and disconnect the cables from the stop switch.



Unhook the throttle cable from the carburettor.

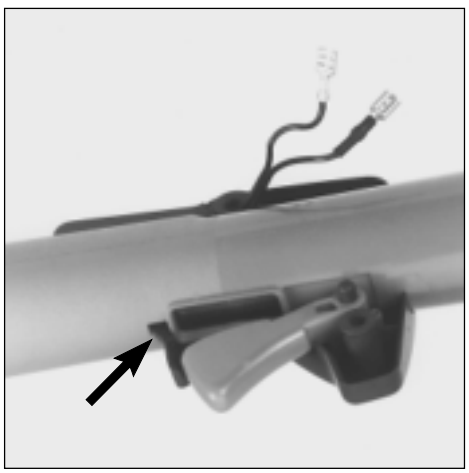
Lift up the plastic guide and unhook the throttle cable from the carburettor.

Inspect the different parts with regard to wear and damage.

Replace damaged components.

Fold back the left half of the throttle.

The different parts are now easily accessible for service or replacement.



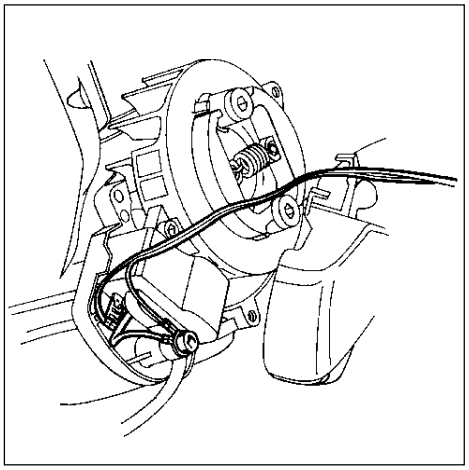
Reassemble the throttle in the reverse order set out for dismantling.

Check that it functions, especially the throttle lock.

Reassemble the throttle in the reverse order set out for dismantling.

Note the following:

- Check that the throttle cable and short circuit cable are not crushed.
- The cable rail should be under the throttle control.
- The pin in the throttle control's left half goes in the hole on the under side of the shaft.



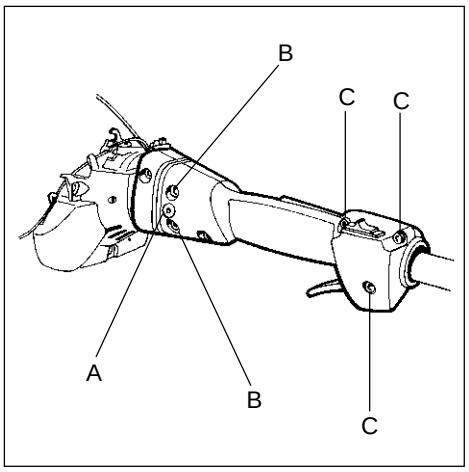
Models 322, 325

Separate the engine body and the clutch cover.

Models 322, 325

We recommend that the throttle is dismantled from the engine and shaft in order to efficiently carry out service and repair work.

Separate the engine body and the clutch cover (see chapter "Ignition system").



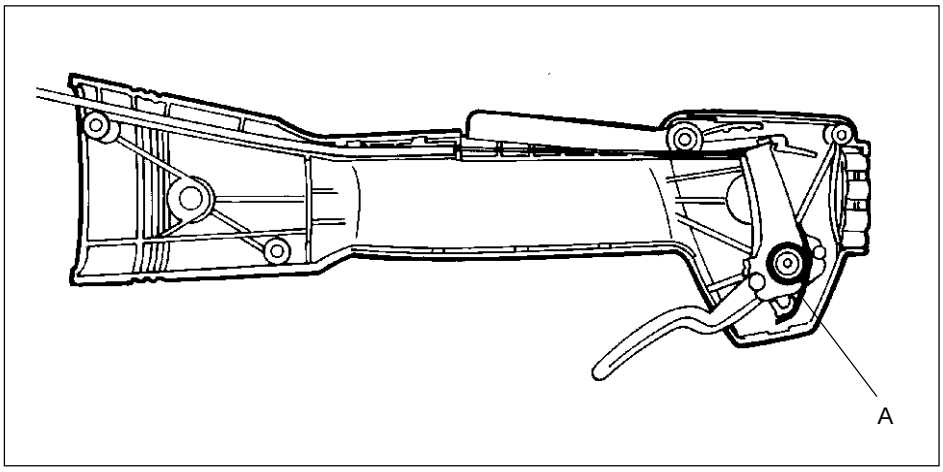
Pull away the shaft with the throttle from the clutch cover.

Remove the throttle from the shaft.

Remove both screws (A) (one on each side).

Loosen the screws (B) and pull off the shaft with the throttle from the clutch cover.

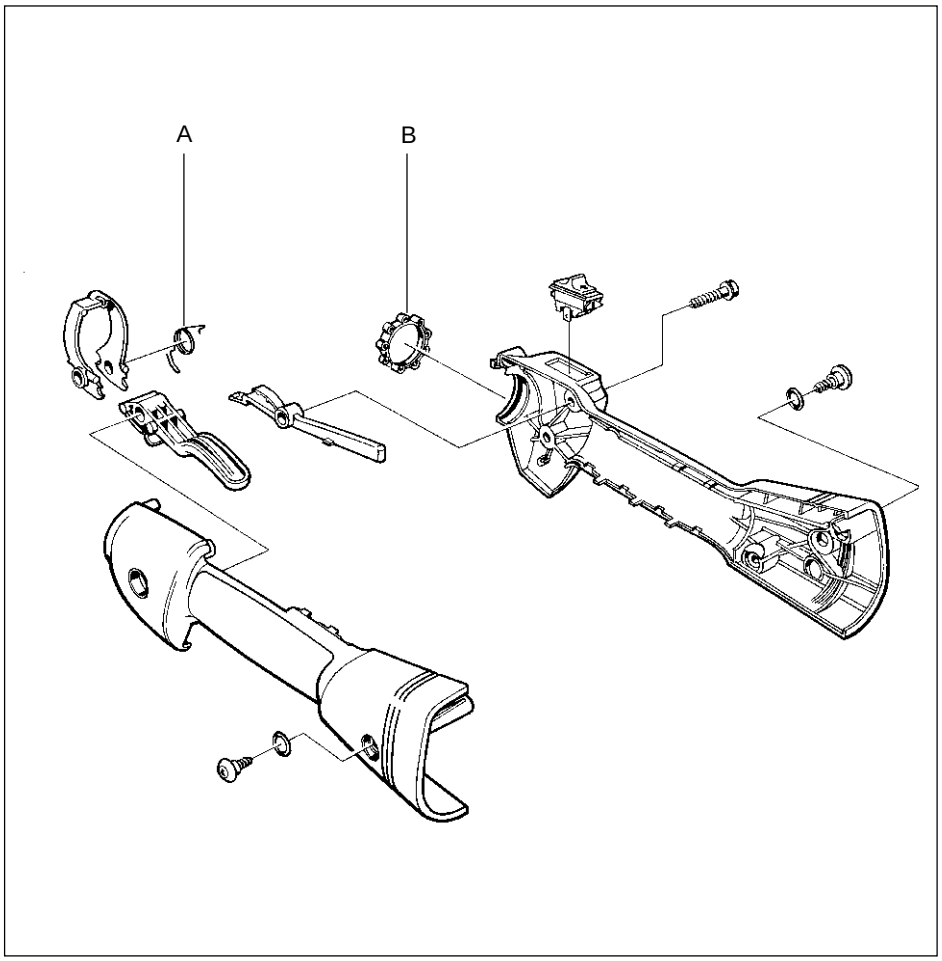
Loosen the 3 front screws (C) (approx. 2 turns) holding the throttle halves and pull the throttle off of the shaft.



Remove the screws holding the throttle together and carefully separate the halves.

Note how the different parts are fitted. Pay special attention to which way the return spring (A) faces.

The stop contact can be pried back using a small screwdriver if it needs to be replaced.



Assembly of the throttle is done in the reverse order as set out for dismantling.

Position the parts in the left-hand throttle half.

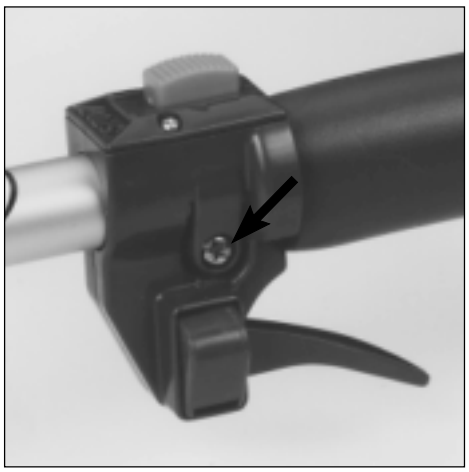
Ensure the return spring (A) is facing the right way.

Check that the throttle cable and the short-circuit cable are pressed correctly down in their channels so that they are not pinched when the two throttle halves are screwed together.

Do not forget to put the vibration element (B) in position before the throttle halves are put together. Lubricate the vibration element with soapy water. This facilitates fitting the throttle on the shaft.

Fit together the throttle halves using the 5 screws, but do not tighten them fully before the throttle has been positioned on the shaft.

Assemble the remaining parts in the reverse order as set out for dismantling.

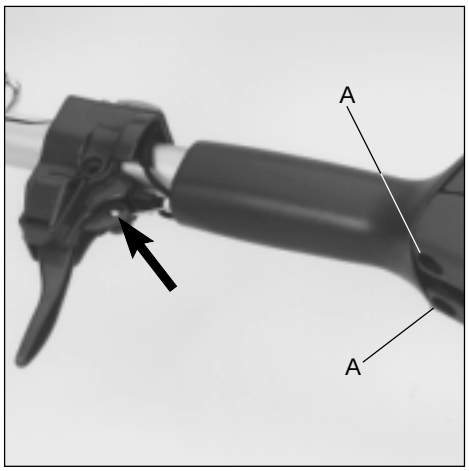


Models 122/32/Mondo

Remove the screw and slide the throttle forward until the throttle cable is accessible.

Models 122/32/Mondo

Remove the screw that holds throttle on the shaft and slide the throttle forward until the throttle cable is accessible.



Remove the throttle cable.

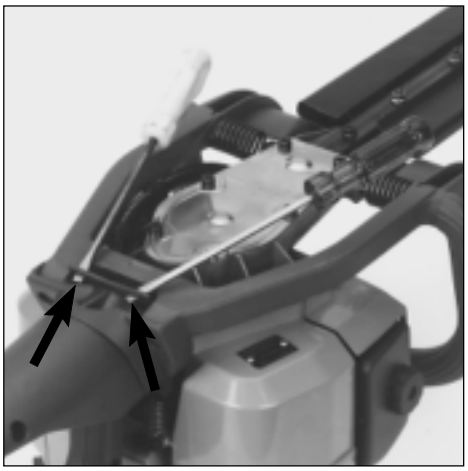
The shaft and engine body must be separated to replace the throttle.

Remove the throttle cable, replace if necessary.

The shaft and engine body must be separated if the entire throttle is to be replaced.

Loosen the screw/screws (A) and remove the short circuit cable.

Remove the handle. It is easier if soap is used as a slip agent.



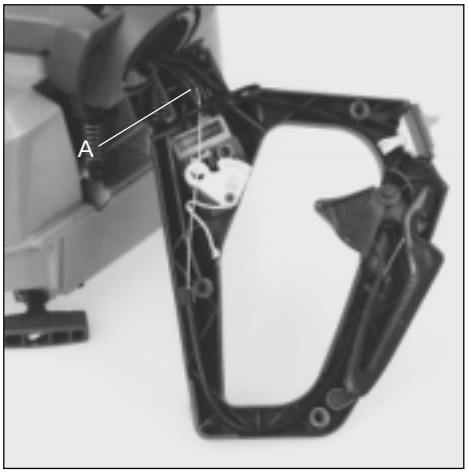
Models 225 H 60, 225 H 75

Remove the locking plate and pull out the rear handle from the handlebars.

Models 225 H 60, 225 H 75

Remove the locking plate by prising it upwards using two screwdrivers.

Pull out the rear handle from the handlebars.



Separate the two handle halves and inspect the different components for wear, replace if necessary.

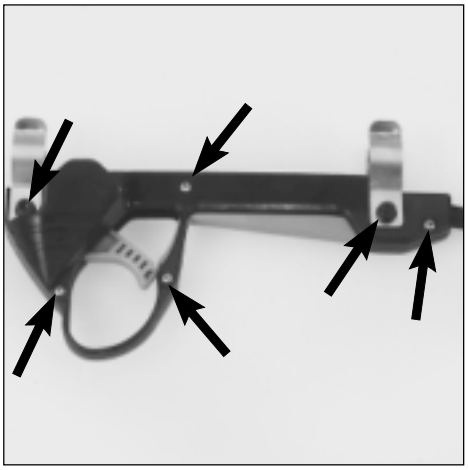
Reassemble in the reverse order set out for dismantling.

Remove the screws and carefully separate the two handle halves. All components are now easily accessible for possible replacement.

Reassemble in the reverse order set out for dismantling.

NOTE!

Ensure that the throttle cable enters the cut-out (A) correctly so that it is not crushed when the other handle half is fitted. Lubricate the O-ring with grease.

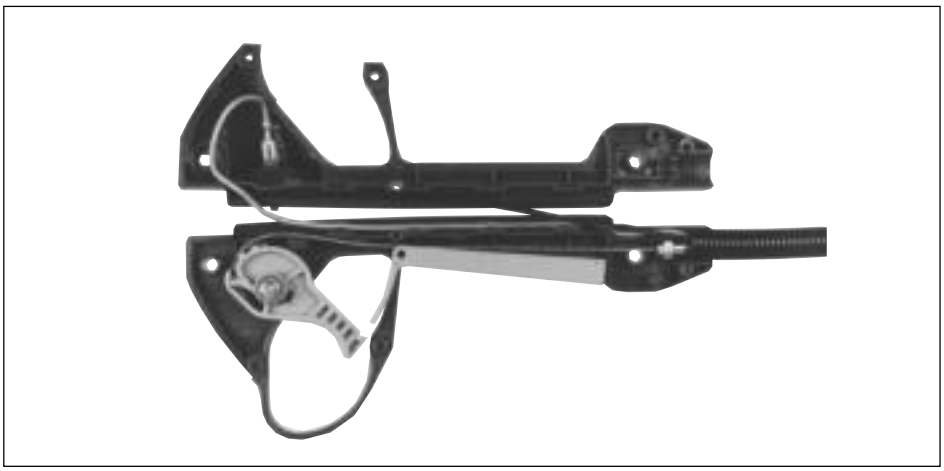


Models 250PS, 235 P

Remove the screws and separate the handle halves.

Models 250PS, 235 P

Remove all the screws and carefully separate the handle halves.



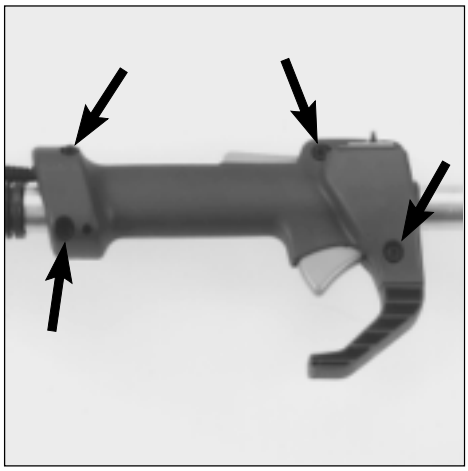
Inspect all parts with regard to wear and damage. Replace damaged parts.

Reassemble in the reverse order set out for dismantling.

NOTE!

Check that the short circuit cables and throttle cable are not crushed.

The short circuit cables should be routed outside of the handle except at the rear and front sections.

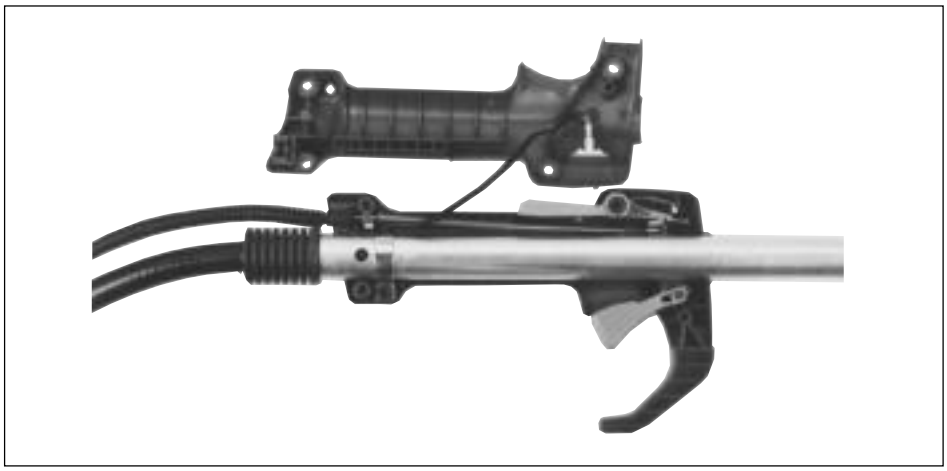


Models 232 RBD, 240 RBD

Remove the screws and separate the handle halves.

Models 232 RBD, 240 RBD

Remove the screws and separate the handle halves.



Inspect all parts with regard to wear and damage. Replace damaged parts.

Reassemble in the reverse order set out for dismantling.

NOTE!

Check that the short circuit cable is *under* the throttle cable's casing to prevent it from being crushed.

Model 18H

Remove the screws and lift off the handle half.

Model 18H

Remove the screws and note how they were placed, as they are of different lengths.

Remove the handle half.

NOTE!

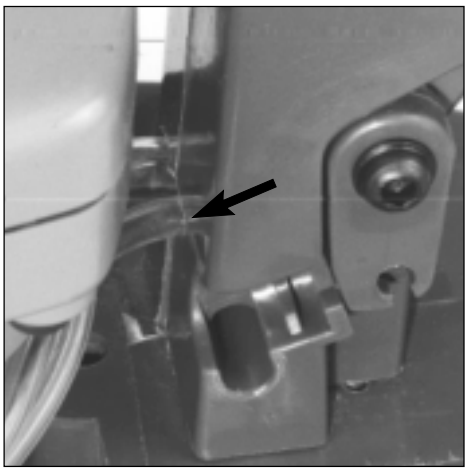
The lever arm for the throttle cable does not need to be dismantled.

Inspect and replace worn or damaged parts.

Assemble in the reverse order as set out for dismantling.

Inspect and replace worn or damaged parts.

Assemble in the reverse order as set out for dismantling.



NOTE!

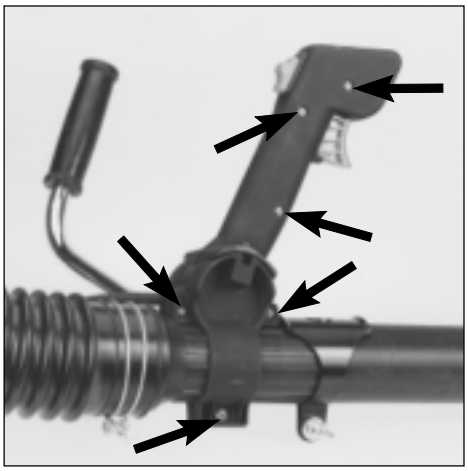
Check that the fuel hose is not pinched and that the stop contact sits correctly.

Fit the throttle cable.

NOTE!

Check that the fuel hose is not pinched and that the stop contact sits correctly.

Fit the throttle cable.



Model 141B

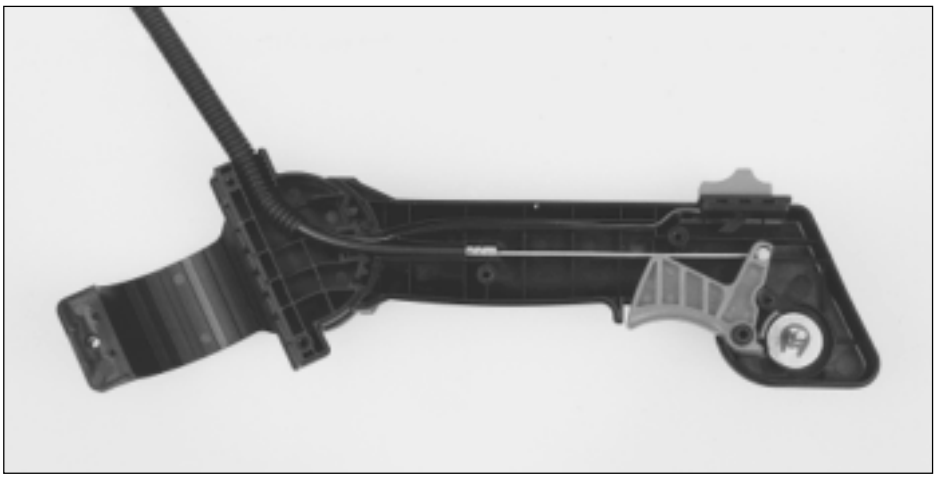
Remove the screws and separate the handle halves.

Model 141B

Remove the screws and separate the handle halves.

NOTE!

The screw for angling the handle does not need to be loosened or removed.



Worn or damaged parts can be easily replaced once the right-hand handle half has been removed.

Check when assembling that the short-circuit cable is not pinched between the two handle halves.

Technical data

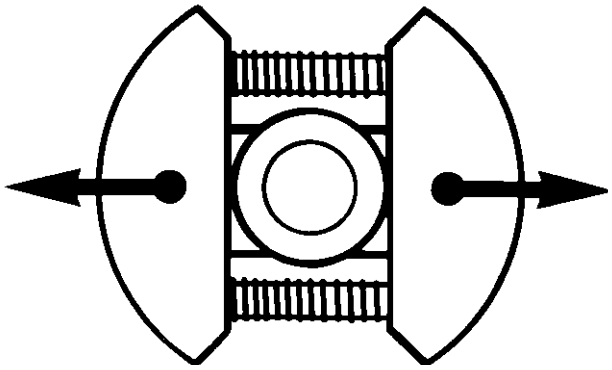
Model	Idling speed rpm	Max. speed rpm ◊	Carburettor type		Tank volume fuel, l
			type	setting *	
Mondo	3,000	9,000	Walbro WT 380	H = 2 L = 2	0.48
122L	3,000	10,800	Walbro WYL	– –	0.40
Mondo Max	3,000	9,000	Walbro WT 380	H = 2 L = 2	0.48
225L/LD	2,700	11,000 – 12,000	Walbro WT 235 Walbro WT 270	H = 1 – 1 1/4 L = 1 – 1 1/4	0.50
232L	2,700	11,000– 12,000	Walbro WT 235 Walbro WT 270	H = 1 – 1 1/4 L = 1 – 1 1/4	0.50
Mondo Mega	3,000	9,000	Walbro WT 380	H = 2 L = 2	0.46
225R/RD	2,700	11,000– 12,000	Walbro WT 235 Walbro WT 270	H = 1 – 1 1/4 L = 1 – 1 1/4	0.50
232R / 235 R	2,700	11,000– 12,000	Walbro WT 235 Walbro WT 270	H = 1 – 1 1/4 L = 1 – 1 1/4	0.50
322	2,500	12,500	Zama EL 11	H = 2 L = 1	0.50
325	2,500	12,500	Zama EL 11	H = 2 L = 1	0.50
240R	2,700	12,500	Walbro WT 99	H = 1 – 1 1/4 L = 1 – 1 1/4	0.80
245R	2,700	12,500	Walbro WT 99	H = 1 – 1 1/4 L = 1 – 1 1/4	0.80
250R	2,700	12,500	Walbro HDA 86B Walbro HDA 142	H = 1 – 1 1/4 L = 1 – 1 1/4	0.80
245RX	2,700	12,500	Walbro WT 99	H = 1 – 1 1/4 L = 1 – 1 1/4	0.80
250RX	2,700	13,500	Walbro HDA 86B Walbro HDA 142	H = 1 – 1 1/4 L = 1 – 1 1/4	0.80
252RX	2,700	14,000	Walbro HDA 142	H = 1 – 1 1/4 L = 1 – 1 1/4	0.80
265RX	2,250	11,500	Tillotson HS 121A	H = 1 – 1 1/4 L = 1 – 1 1/4	1.00
240RBD	2,700	11,000– 12,000	Walbro WT 235 Walbro WT 270	H = 1 – 1 1/4 L = 1 – 1 1/4	0.60
235P	2,700	–	Walbro WT 235 Walbro WT 270	H = 3/4 – 1 L = 3/4 – 1	0.50
250PS	2,500	11,500	Walbro HDA 86B Walbro HDA 142	H = 1 – 1 1/4 L = 1 – 1 1/4	0.90
225E	2,700	11,000– 12,000	Walbro WT 270	H = 1 – 1 1/4 L = 1 – 1 1/4	0.50
18H	3,000	10,000	Walbro WT 379 Zama CIU-W4	H = 2 L = 2	0.21
225H60/75	2,700	11,000– 12,000	Walbro WT 406 Walbro WT 421	H = 1 – 1 1/4 L = 1 – 1 1/4	0.40
140B	2,500		Walbro HDA 110A	H = 1 L = 1	2.0
141B	2,500		Walbro WYK	–	2.0
132HBV	2,500	7,600	Walbro WT 141		0.60
225BV/225HBV	2,500	8,200	Walbro WT 235 Walbro WT 270	H = 1 – 1 1/4 L = 1 – 1 1/4	0.40

* Only basic setting. Applies to carburettor needles without plastic caps fitted.

◊ Do not exceed the stated max speed. Risk of engine damage. The figures apply to a run-in engine Reduce the speed by 600–700 rpm for an engine that has not been run-in.

Centrifugal clutch

4.



Contents

Clutch and clutch drum

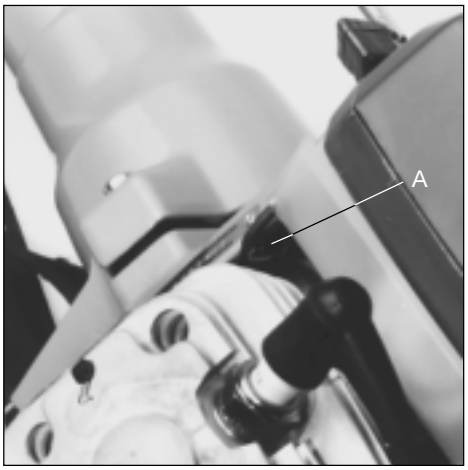
Centrifugal clutch

The centrifugal clutch has the task of transferring the power from the engine to the cutting equipment. As the name implies, it works according to a centrifugal principle.

This means the clutch's friction shoes are thrown outwards towards the clutch drum at a certain engine speed. When the friction against the drum is sufficiently great it drives the drive shaft at the same speed as the engine.

Some slipping occurs between the clutch and the clutch drum when accelerating as well as in the reversed situation when the cutting equipment jams. Thereby preventing abnormal load changes on the crankshaft.

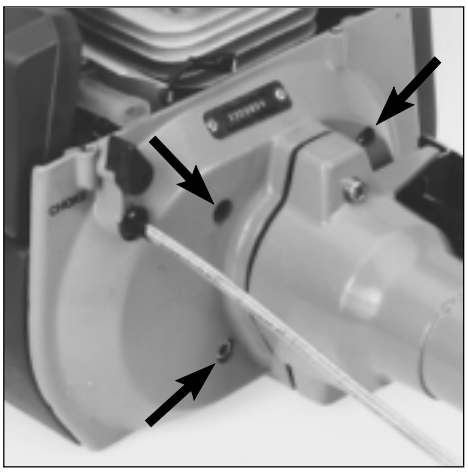
The engagement speed has been carefully tested so that the engine can idle without the cutting equipment's drive shaft rotating.



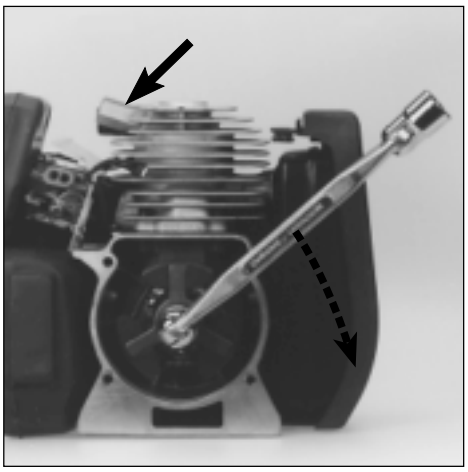
Clutch model 265

Dismantling

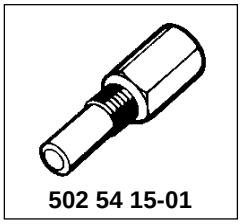
Remove the cylinder cover and the earth cable (A).



Undo the screws and lift off the clutch cover complete with the shaft.



Dismantle the centrifugal clutch from the crankshaft.



502 54 15-01

Clutch model 265

Dismantling

Remove the cylinder cover and the earth cable (A).

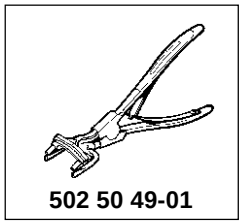
Undo the 4 bolts that hold the clutch cover on the engine body.

Lift off the complete unit with shaft and clutch cover.

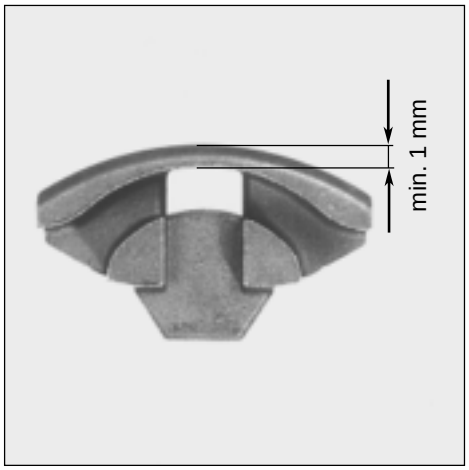
Replace the spark plug with the piston stop no. 504 91 06-05. Unscrew the clutch from the crankshaft.

NOTE!
Left-hand thread!

Remove the clutch springs.



Remove the clutch springs using pliers no. 502 50 49-01 and a screwdriver.

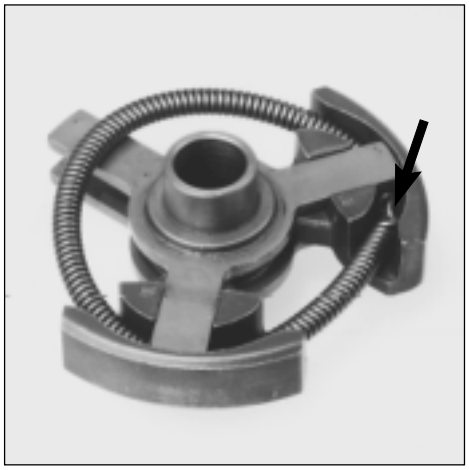


Clean and inspect the clutch parts with regard to damage and wear.

Clean and inspect the clutch hub's arms and the clutch shoes with regard to wear.

There must be at least 1 mm of material remaining on the most worn area on the clutch shoes.

All shoes must be replaced at the same time.



Assembly

Place two clutch shoes and the spring on the clutch hub.

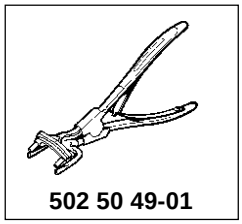
Assembly

Place two clutch shoes and the spring on the clutch hub.

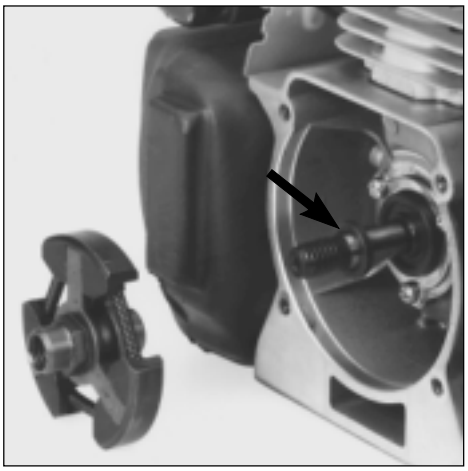
NOTE!

The spring's connection point should come in the centre of one of the hub's arms.

Fit the remaining clutch shoe.



Fit the remaining clutch shoe. Use the assembly pliers no. 502 50 49-01 and a screwdriver.

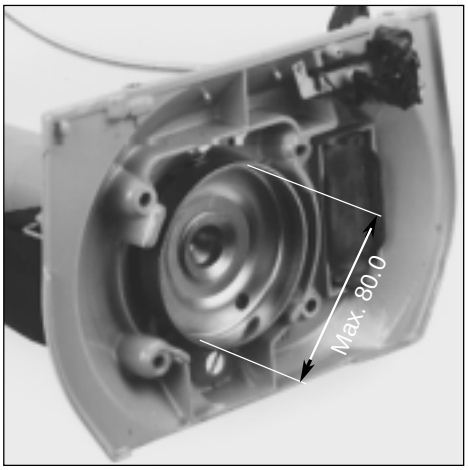


Fit the clutch on the crankshaft.

Fit the clutch on the crankshaft.

Do not forget the thick spacer inside the clutch.

Tighten the clutch.



Clutch drum

Model 265

Check the clutch drum for damage and wear.

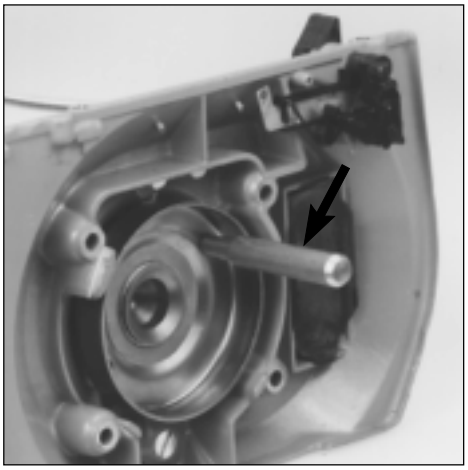
Replace the clutch drum if necessary.

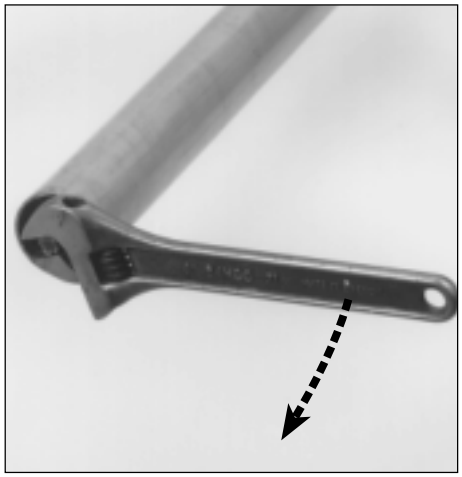
Clutch drum

Model 265

Check the clutch drum for damage and wear.

Measure the inside diameter of the drum. It must not be greater than 80.0 mm. Replace with a new drum if this is the case.





Dismantle the angle gear so that the end of the drive shaft is accessible.

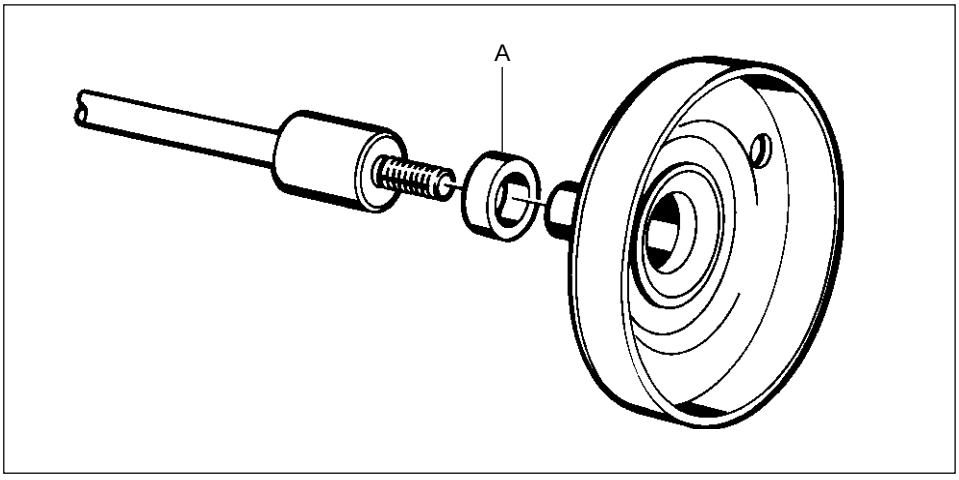
Lock the clutch drum by inserting a suitable punch through one of the holes so that it rests against one of the reinforcement ribs in the clutch cover. (See photo).

Undo the drive axle.

NOTE!

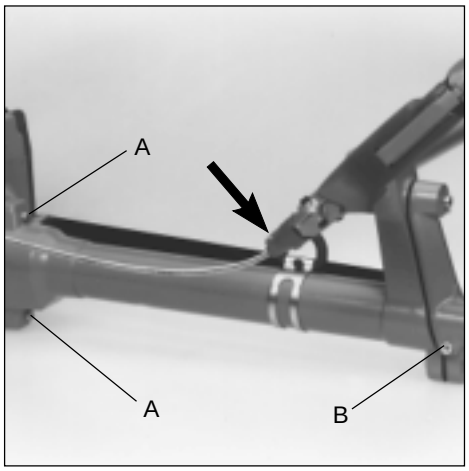
Left-hand thread.

Clutch drum can be extremely tight.



It is far easier when fitting the clutch drum to keep the shaft vertical with the clutch drum facong upwards. This is so the spacer (A) can be centred around the drive shaft when the clutch drum is screwed in position.

Fit all other parts in the reverse order set out for dismantling.



Drive shaft

Model 265

Replace the drive shaft if the splines are worn.

Loosen the throttle and remove the screws (A).

Loosen the screw (B).

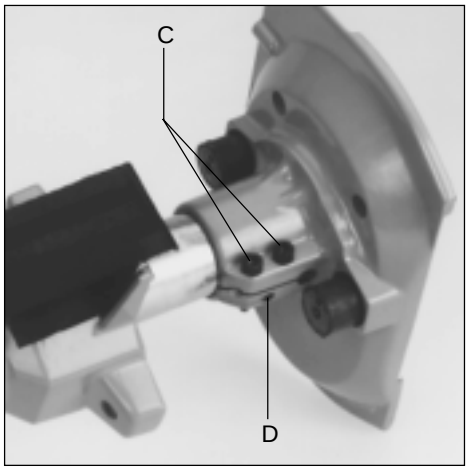
Drive shaft

Model 265

Check the drive shaft. If the splines where the shaft meshes with the angle gear are worn it should be replaced.

Loosen the throttle from the handle and remove the screws (A).

Loosen the screw (B).

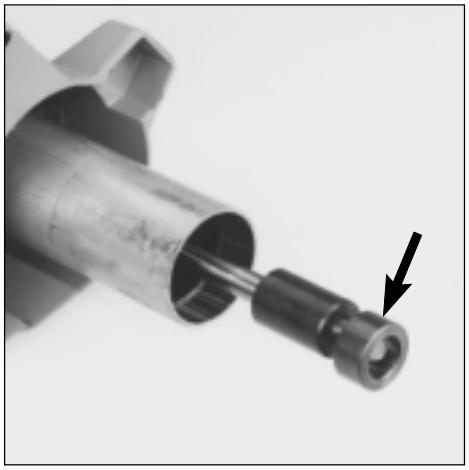


Pull off the clutch cover from the tube and pull out the drive shaft.

Separate the clutch cover and the outer support so the screws (C) and the stop screw (D) are accessible.

Loosen the screws and pull off the clutch cover from the tube.

Pull out the drive shaft and check it. If it is bent it must be replaced under all circumstances.



Replace the vibration dampers if necessary.

Assemble the drive shaft and the remaining parts in the reverse order set out for dismantling.

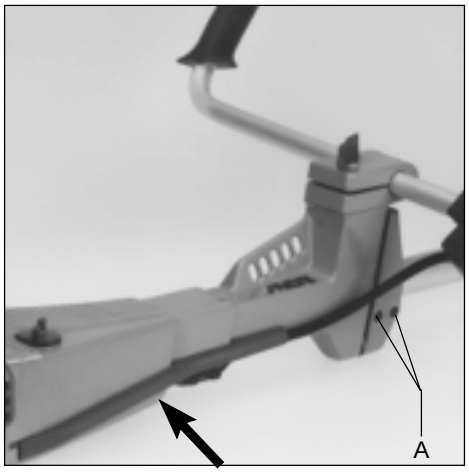
It is now appropriate to replace the vibration dampers if damaged.

Assembly takes place in the reverse order set out for dismantling.

NOTE!

Lubricate the drive shaft using engine oil before assembling and do not forget the spacer before the shaft is slid into the clutch cover.

The tube should be slid into the clutch cover as far as possible so that it rests against the bearing.



Clutch

Model 250

Dismantle the cover strip and loosen the screws (A).

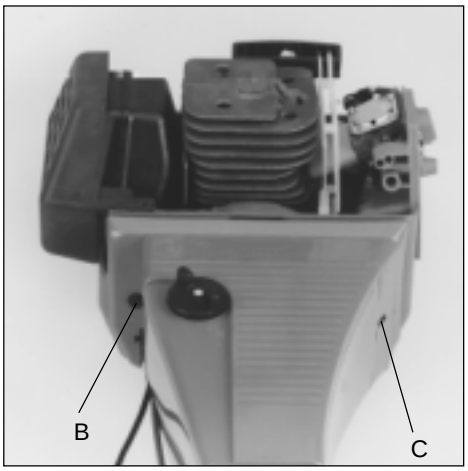
Clutch

Model 250

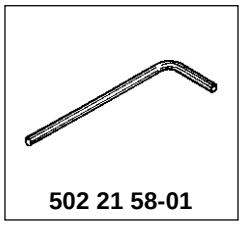
Dismantle the following:

Cylinder cover, fuel pipe on the carburettor and the cover strip over the throttle cable and short-circuit cable.

Loosen the screws (A).



Remove the screws (B) and (C).



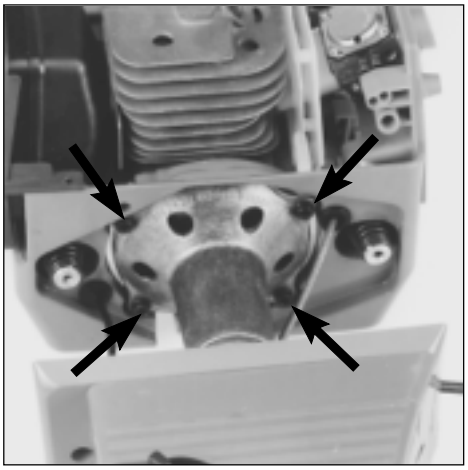
Remove the screws (B) and (C). Use tool no. 502 21 58-01 to access the screws (C).

Slide the tank unit forwards on the shaft.

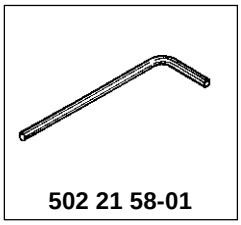
Remove the throttle from the handles.

Thread the throttle cable and the short circuit cable through the slot in the fuel tank.

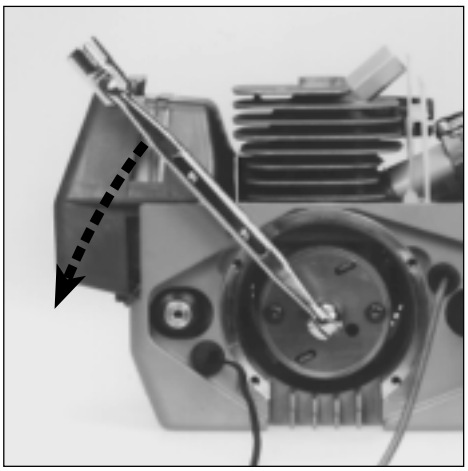
Slide the tank unit forwards on the shaft.



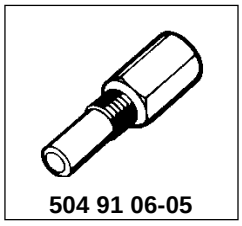
Remove the screws holding the clutch housing and separate the shaft from the engine.



Remove the screws holding the clutch housing on the engine body and pull away the entire shaft unit.



Dismantle the clutch nut.



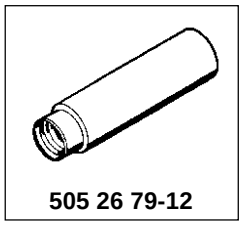
Replace the spark plug with piston stop no. 504 91 06-05.

Remove the nut holding the clutch.

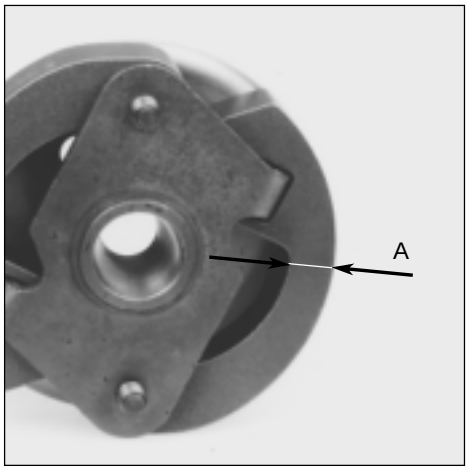
Dismantle the clutch from the crankshaft.

Fit the drift no 505 26 79-12 on the crankshaft. Do not screw it down fully against the clutch.

Lift the engine body by the clutch and apply a few sharp blows with a hammer to the drift until the clutch becomes loose.

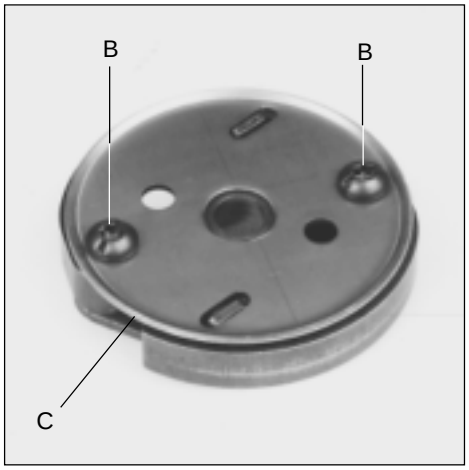


505 26 79-12



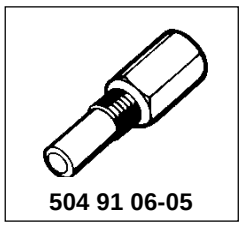
Check the clutch shoes for wear. Replace if necessary.

Check the clutch shoes for wear by measuring the distance (A). It must not be below 3 mm. If this is the case replace both shoes.



Remove the screws (B) and cover washers (C).

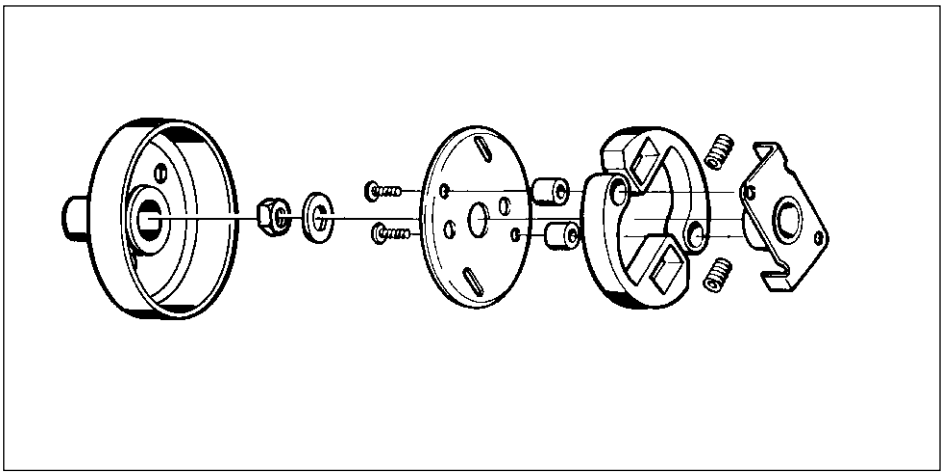
Strip the clutch by first removing the screws (B) and then lift off the cover washers (C).



504 91 06-05

Remove the clutch shoes from the hub.

Pry off the clutch shoes from the hub using a screwdriver. Keep your thumb over the spring as shown in the photo.

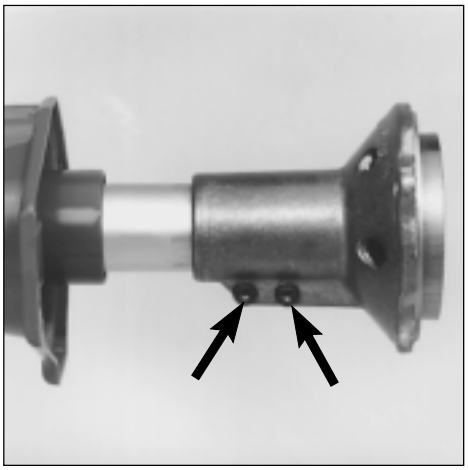


Check all the parts with regard to wear and damage. Replace faulty parts.

Assemble in the reverse order set out for dismantling.

Compress the spring using a pair of flat nose pliers and insert it in the cut-out in the clutch shoes.

NOTE!
Use Loctite on the screws.



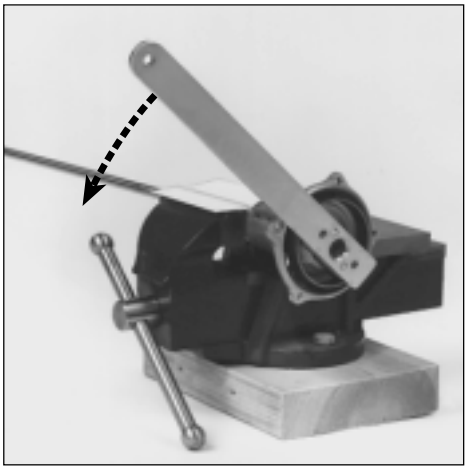
Clutch drum
Model 250

Dismantle the clutch housing complete.

Clutch drum
Model 250

Loosen the screws holding the clutch housing on the shaft.

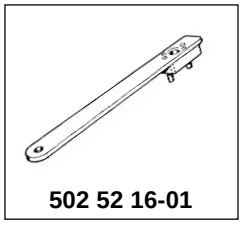
Pull off the clutch housing complete with the clutch drum and the drive shaft from the tube.



Undo the clutch drum from the drive shaft.

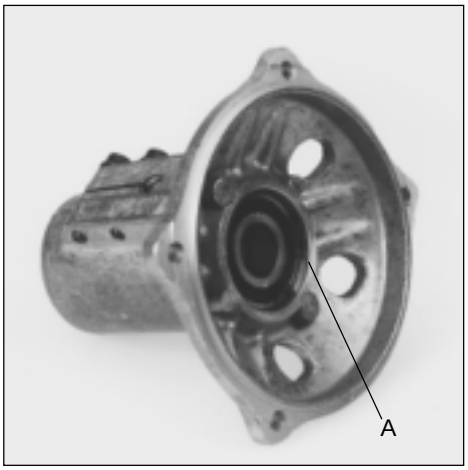
Clamp the drive shaft in a vice and undo the clutch drum.

NOTE!
Use vice guards on the vice so not to damage the drive shaft.
Use tool no. 502 52 16-01 to undo the clutch drum.



502 52 16-01

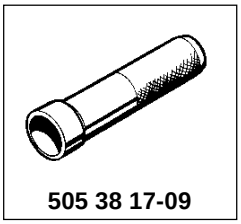
Check the clutch drum for wear. The inside diameter must not exceed 70.0 mm.



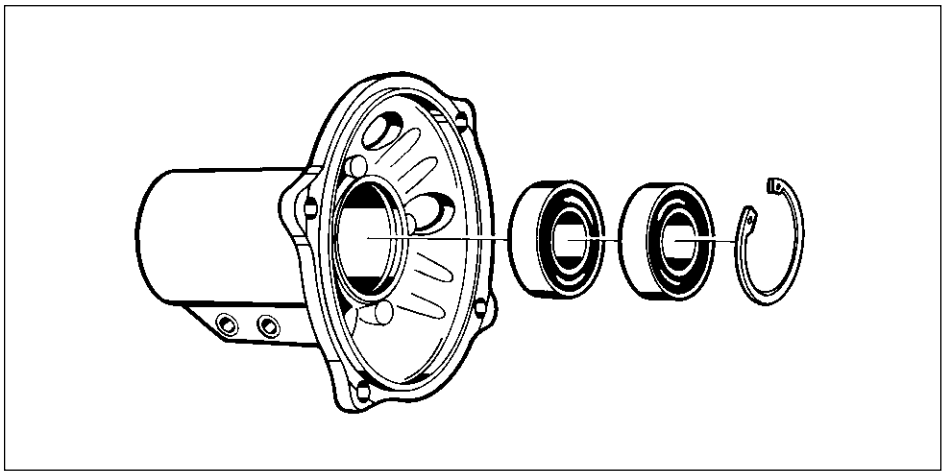
Remove the circlip and bearing from the clutch housing.

Remove the circlip (A).

Carefully heat the clutch housing (approx. 150°C) and press out the bearing using the punch no. 505 38 17-09.



505 38 17-09

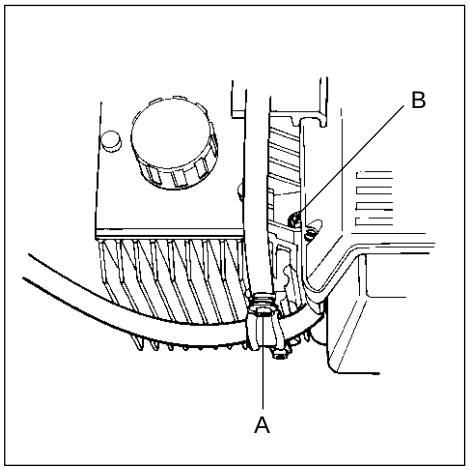


Replace faulty parts and assemble in the reverse order set out for dismantling.

NOTE!

Use Loctite on the clutch drum's threads.

The bearing is easier to fit if the clutch housing is hot (approx. 150°C).



Clutch

Model 250PS

Unscrew the cable clamp (A) and the hose clamp (B).

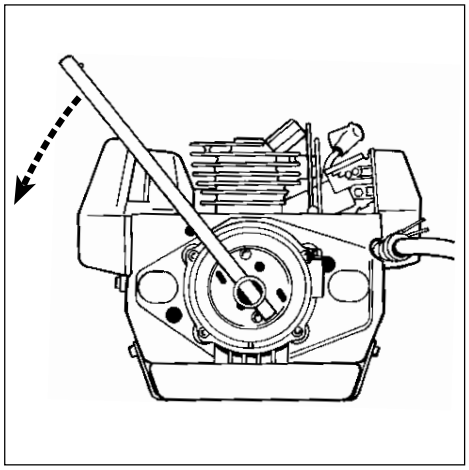
Turn the hydraulic oil tank clockwise and pull it off from the engine body.

Clutch

Model 250PS

The clutch on this model is positioned between the engine body and the hydraulic unit.

1. Unscrew the clamp (A) holding the control cable on the hydraulic oil tank.
2. Loosen the hose clamp (B).
3. Turn the hydraulic oil tank clockwise and pull it off from the engine body. (Bayonet fitting).

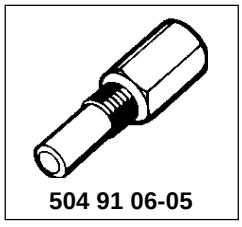


Remove the clutch nut and dismantle the clutch according to the instructions for model 250.

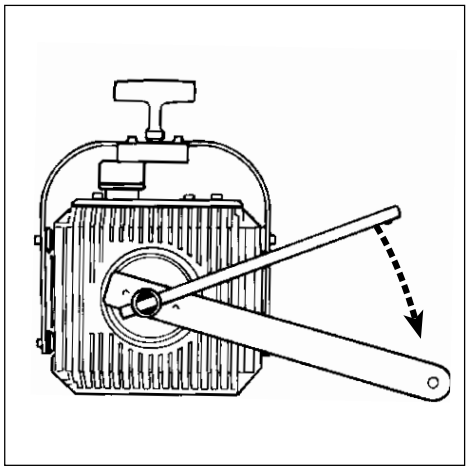
Dismantle the cylinder cover and replace the spark plug with piston stop no. 504 91 06-05.

Remove the clutch nut by turning it anti-clockwise.

Dismantle the clutch from the crankshaft and carry out an inspection and servicing as set out in the instructions for model 250.



504 91 06-05



Clutch drum

Model 250PS

Dismantle the clutch drum from the hydraulic unit's axle.

Clutch drum

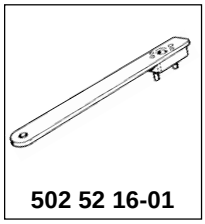
Model 250PS

The clutch drum is screwed onto the hydraulic unit's axle.

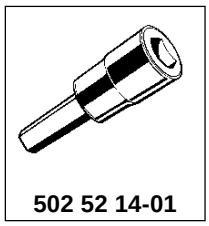
Dismantle the drum by using the holding tool 502 52 16-01 and allen key 502 52 14-01.

NOTE!

Turn the allen key clockwise.

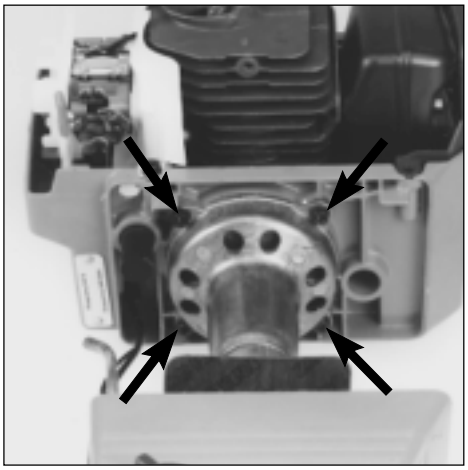


502 52 16-01



502 52 14-01

Replace the clutch drum if the inner diameter exceeds 70.0 mm.



Clutch

Models 240/245

Separate the engine body and tank unit.

Remove the screws by the clutch housing and remove the shaft.

Clutch

Models 240/245

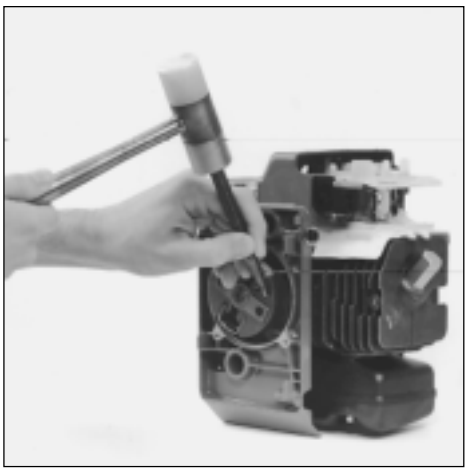
Separate the engine body and the tank unit in the same way as described for model 250.

Remove the screws that hold the clutch housing against the engine body and lift off the entire shaft unit.

The clutch can be one of two different designs. Firstly, a three shoe clutch of the same type as used on model 235. See this model for service measures. This clutch was introduced from the following serial numbers:

Model 240R no. 82 00 059, model 245R no. 81 70 180, model 245RX no. 81 60 227.

Secondly, the clutch can be a two shoe model as described below.

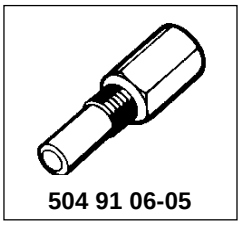


Dismantle the clutch using a punch and hammer.

Replace the spark plug with piston stop no 504 91 06-05. Loosen the clutch shoes from the crankshaft.

One of the clutch shoes is countersunk to give a purchase for a punch.

Loosen the clutch with a few heavy blows from a hammer.

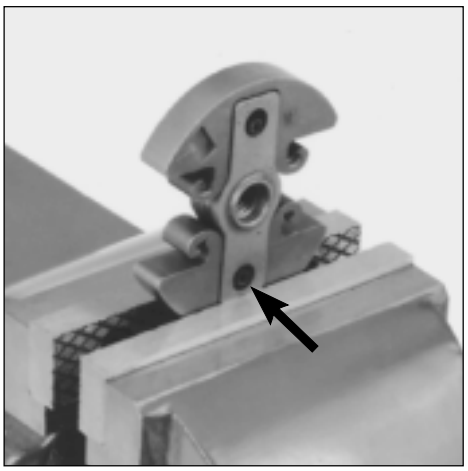


504 91 06-05

NOTE!
The clutch has a left-hand thread.

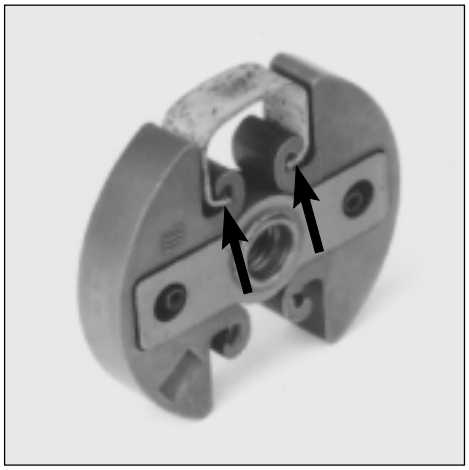
Remove the leaf springs.

Remove the leaf springs by pressing apart the ends using a pair of circlip pliers.

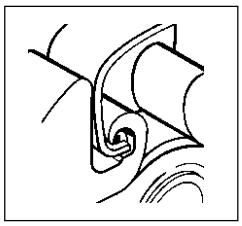


Press out the tubular pins.

Use a suitable punch to remove the tubular pins so that the clutch shoes can be replaced.



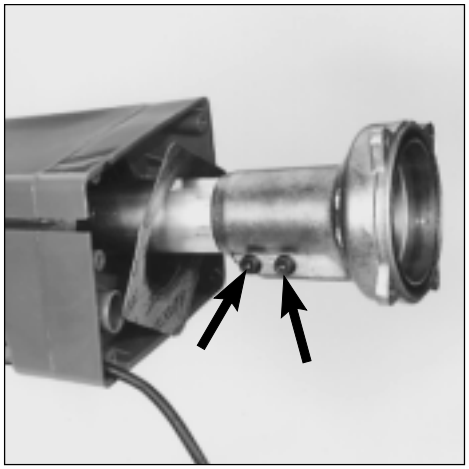
Replace any worn or damaged parts and ensure the clutch springs are fitted correctly.



Replace any worn or damaged parts. Both clutch shoes should be replaced at the same time.

NOTE!

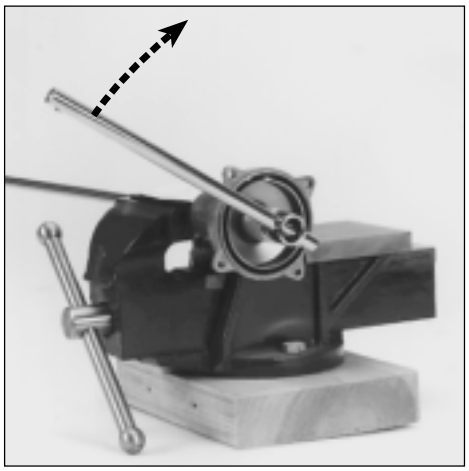
Check when fitting the clutch springs that the small pins are on each side of the clutch shoes.



Pull off the clutch housing complete from the tube.

Loosen the screws that hold the clutch housing on the tube.

Pull off the clutch housing complete with clutch drum and drive shaft from the tube.



Clutch drum

Models 240/245

Undo the clutch drum.

Clutch drum

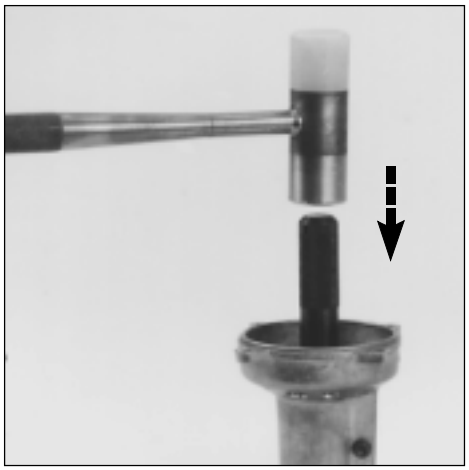
Models 240/245

Clamp the drive shaft in a vice and undo the clutch drum. 19 mm spanner.

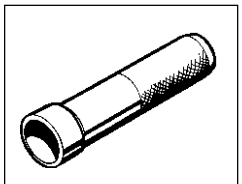
Use vice guards so that the drive shaft is not damaged.

NOTE!

The clutch drum has a left-hand thread.



Heat the clutch housing and press out the bearing.



505 38 17-09

Carefully heat the clutch housing to about 150°C and press out the bearing using a suitable punch, e.g. 505 38 17-09.

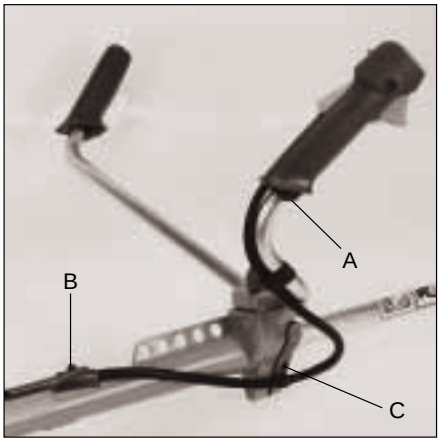
Replace any damaged parts and assemble in the reverse order set out for dismantling.

The bearing is easier to fit if the clutch housing is hot (approx. 150°C).

NOTE!

Use Loctite on the clutch drum's threads.

Do not forget the heat shield between the clutch housing and the fuel tank.



Clutch

Models 225 R/232 R

Dismantle the throttle and cable channel.

Models 225 L/232 L

Remove the cylinder cover.

Loosen the throttle cable from the carburettor and lift off the cable guide from the crankcase.

Clutch

Models 225 R/232 R

Dismantle the screw (A) that holds the throttle and screw (B) on the cable channel.

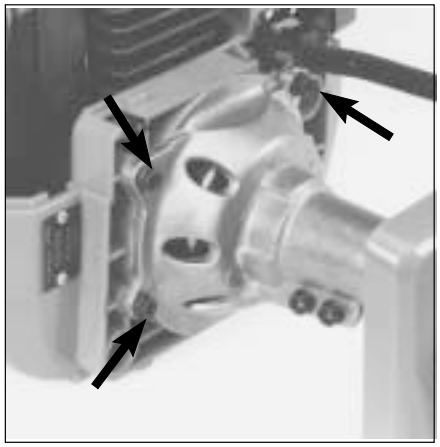
Loosen the screw (C) and slide the handle clamp forwards on the shaft.

Dismantle the cylinder cover.

Models 225 L/232 L

Remove the cylinder cover.

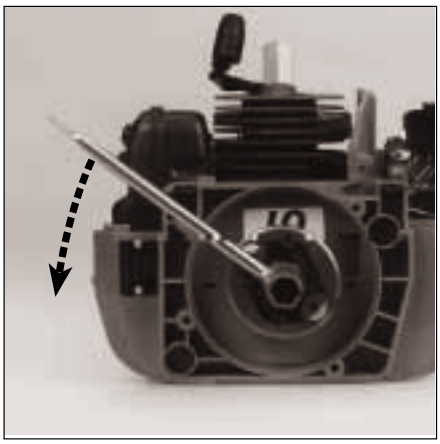
Loosen the throttle on the carburettor and lift off the cable guide from the crankcase.



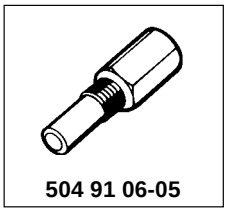
Separate the shaft unit from the engine body.

Remove the 4 screws that hold the clutch cover on the crankcase.

Now remove the entire shaft unit from the engine body.

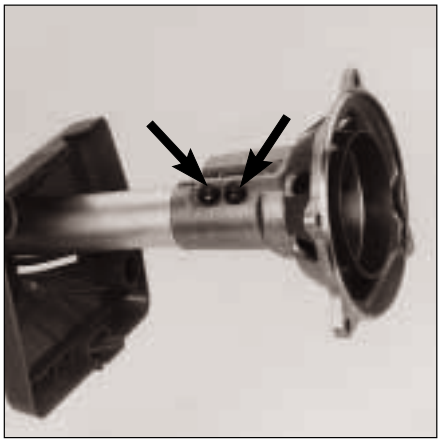


Dismantle the clutch from the crankshaft.



504 91 06-05

Replace the spark plug with piston stop no. 504 91 06-05 and dismantle the clutch from the crankshaft.



Clutch drum

Models 225/232/235

Dismantle and assemble the clutch housing, clutch drum and its bearings in the same way as described for model 250.

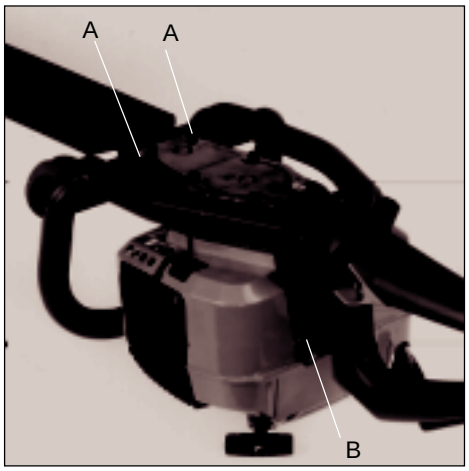
Clutch drum

Models 225/232/235

Loosen the two screws holding the clutch housing on the shaft.

Pull off the clutch housing complete with clutch drum and drive axle in the shaft.

Dismantle and assemble the clutch drum and its bearings in the same way as described for model 250.



Models 225 H60/H75

Separate the engine body and cutting equipment.

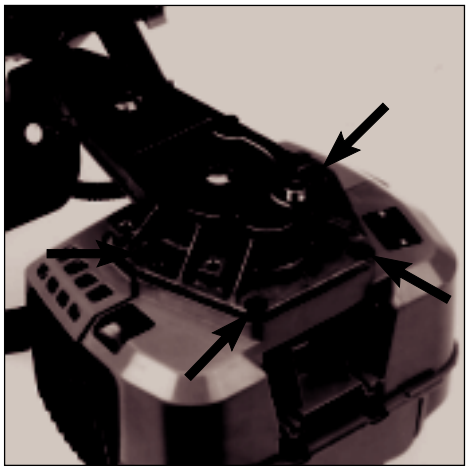
Models 225 H60/H75

Separate the engine body and cutting equipment as follows:

Remove the 4 screws (A) and (B) by the vibration dampers to remove the handle assembly.

WARNING!

The transport guard should always be fitted when working on the cutting equipment to avoid cuts to the hands.

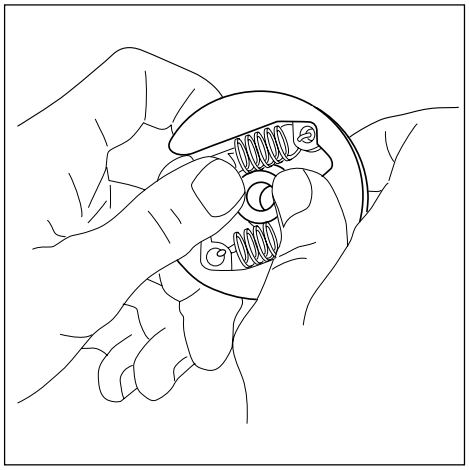


Dismantle the cutting equipment and clutch from the engine.

Remove the screws that hold the clutch cover on the crankcase.

Lift off the clutch cover complete with the cutting equipment.

Dismantle the clutch from the crankshaft in the same way as described above.



Press out the clutch hub.

Strip this type of clutch by pressing out the clutch hub from the back using your thumbs.

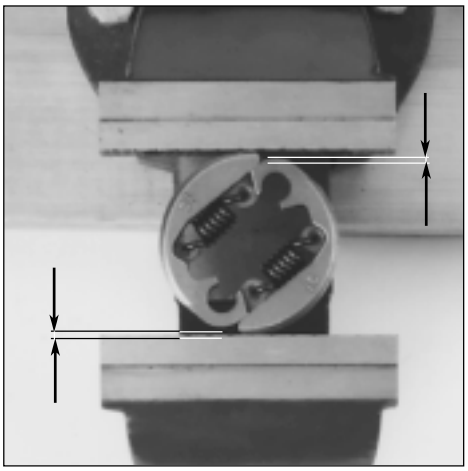
Inspect the parts of the clutch with regard to wear and damage.

Inspect the clutch shoes with regard to wear on the bearing points and the springs for crack formation or breakage.

NOTE!

The shoes and springs should always be replaced in pairs.

Also check the clutch centre's shoe bearings.



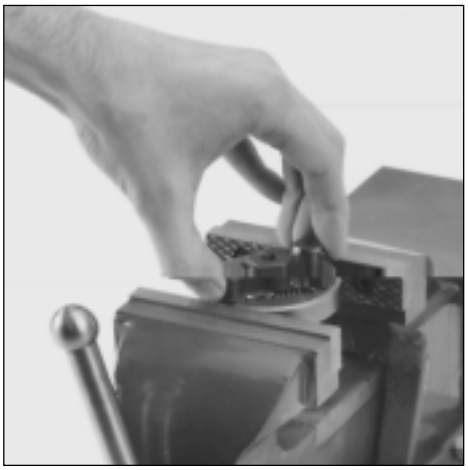
Hook on the springs and place the clutch in a vice.

Start to assemble the clutch by hooking the springs in the clutch shoes.

Then place the clutch in a vice as shown.

NOTE!

The bevel on the clutch shoes should face upwards.



Tighten the vice carefully and position the centre.

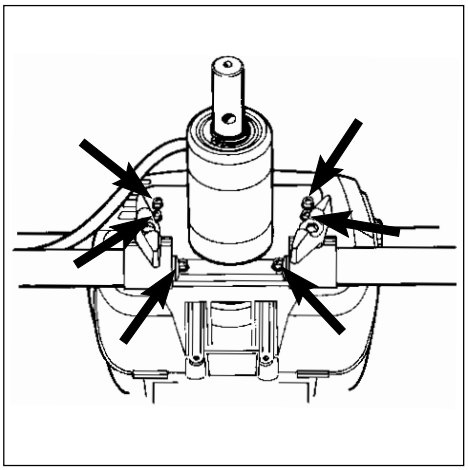
Tighten the vice sufficiently so that the clutch centre can be positioned.

Fit the clutch on the crankshaft.

NOTE!

Do not forget the large flat washer between the clutch and the crankcase.

The washer acts as a support for the clutch shoes. If the washer is missing the shoes can be forced out of the hub when the engine is run causing damage to the crankcase.



Clutch drum

Models 225 H60/H75

See chapter "Attachments".

Clutch drum

Models 225 H60/H75

See chapter "Attachments".

Clutch

Models 225 AI15, 225 AI25

Dismantle the gearbox from the engine body to access the clutch and clutch drum.

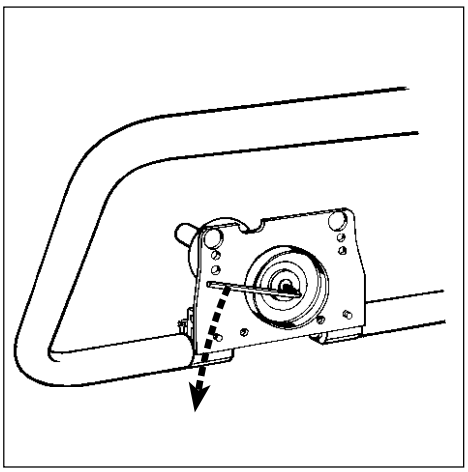
Also see the previous section for model 225/232 concerning servicing the clutch.

Clutch

Models 225 AI15, 225 AI25

Remove the 6 screws holding the gear housing on the engine body and lift off the gearbox.

See the previous section for model 225/232 with regard to service and assembly of the clutch.



Clutch drum

Models 225 AI15, 225 AI25

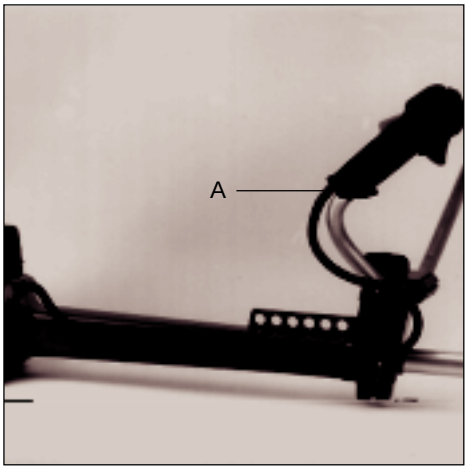
Dismantle the screw and lift out the clutch drum.

Clutch drum

Models 225 AI15, 225 AI25

The clutch drum can be removed once the screw in the centre is unscrewed anticlockwise.

Replace the clutch drum if the inner diameter exceeds 64.5 mm.



Clutch

Model 235

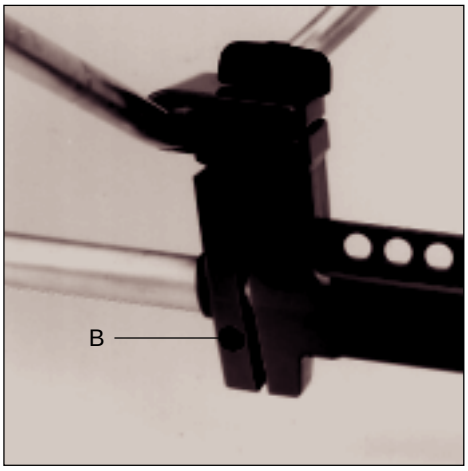
Dismantle the throttle. Snap off the protective casing.

Clutch

Model 235

Dismantle the throttle by removing screw (A).

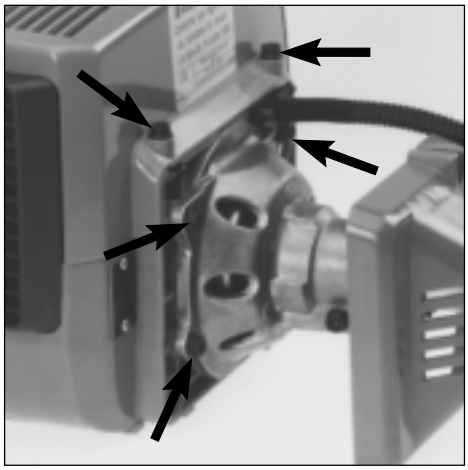
Snap off the protective casing for the throttle cable and the short circuit cable.



Loosen screw (B).

Slide the plastic cover complete with handle forwards on the shaft.

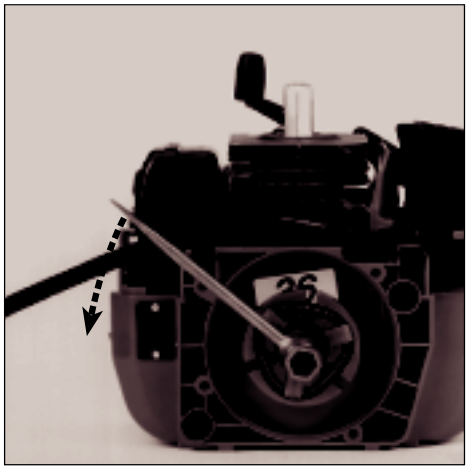
Loosen screw (B) and slide the plastic cover complete with handle forwards on the shaft so that the screws holding the clutch housing become accessible.



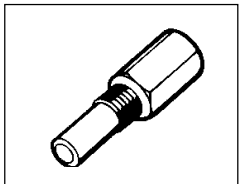
Dismantle the clutch cover and the cylinder cover.

Remove the four screws holding the clutch cover on the crankcase.

Remove the cylinder cover.



Dismantle the clutch from the crankshaft.

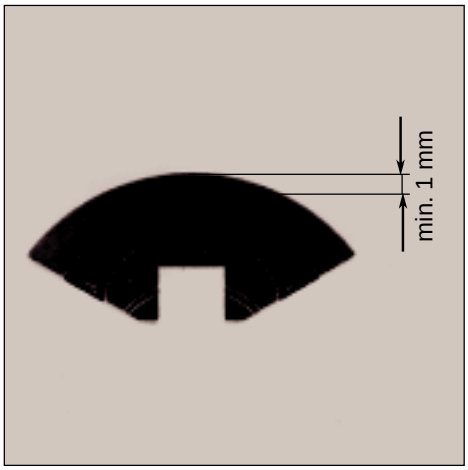


504 91 06-05

Replace the spark plug with piston stop no. 504 91 06-05 and dismantle the clutch from the crankshaft.

Strip the clutch.

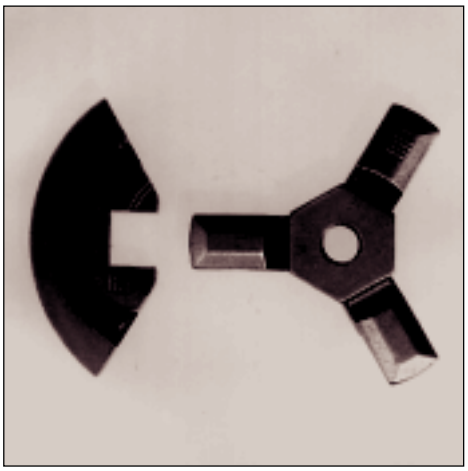
Strip the clutch by pressing the clutch shoes from behind using your thumbs.



The clutch shoes must have at least 1 mm of material remaining.

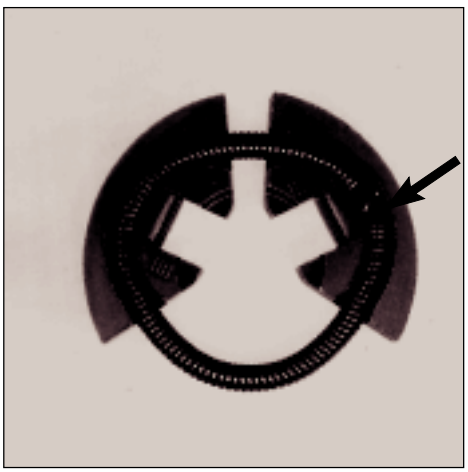
Check that the shoes have at least 1 mm of material remaining where they are worn the most.

When replacing all three shoes should be replaced at the same time to avoid imbalance.



Check the arms on the clutch centre and the guide slots for wear.

Check that the arms on the clutch centre are not heavily worn or show signs of cracking and that the clutch shoe guide slots are not elongated. When replacing all shoes the clutch centre should be replaced at the same time.



The spring's connection point should be positioned in the centre of the slot for the clutch centre's arm.

When assembling the clutch the spring is first positioned in one clutch shoe so that the spring's connection point comes in the centre of the slot for the clutch centre's arm.

Then place the spring in one more shoe.

Position the clutch hub.

Clamp the clutch in a vice and bend out the spring using a screwdriver so that the third clutch shoe can be fitted.

Now position the clutch hub and then clamp the clutch in a vice.

Use a screwdriver to bend out the spring so that the third clutch shoe can be pressed into place.

Use a pair of flat nose pliers to locate the spring if necessary.

On model 235 P the clutch is accessible when the hydraulic unit has been dismantled.

Dismantle the clutch from the crankshaft.

On model 235 P the clutch is accessible when the hydraulic unit has been dismantled.

Remove the 4 screws and lift off the hydraulic unit.

Dismantle the clutch from the crankshaft in the same way as set out for models 225/232.

The clutch has the same design as models 225/232.

Clutch drum

Models 235, 235P

See chapter "Hydraulic unit".

Clutch drum

Models 235, 235P

See chapter "Hydraulic unit".

Clutch

Models 240 RBD

Dismantle the cover plate and the clutch housing.

Unscrew the clutch from the crankshaft.

Clutch

Models 240 RBD

Remove the 4 screws holding the cover plate and clutch housing on the crankcase.

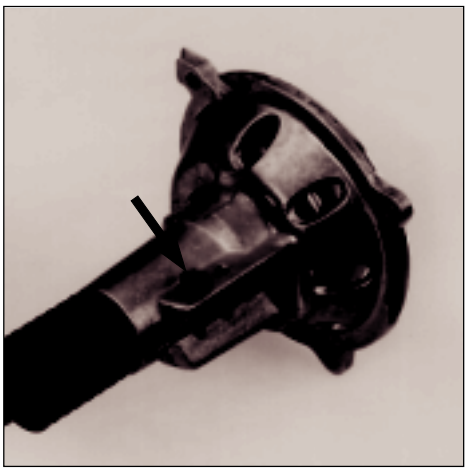
Dismantle the clutch from the crankshaft as explained for models 225/232.

The clutch has the same design as models 225/232.

NOTE!

Do not forget the large flat washer between the clutch and the crankcase.

The washer acts as a support for the shoes, and if missing the shoes can be forced out of the hub when the engine is run causing damage to the crankcase.



Clutch drum

Model 240 RBD

Loosen the screws so that the drive shaft can be pulled out of the clutch housing.

Clutch drum

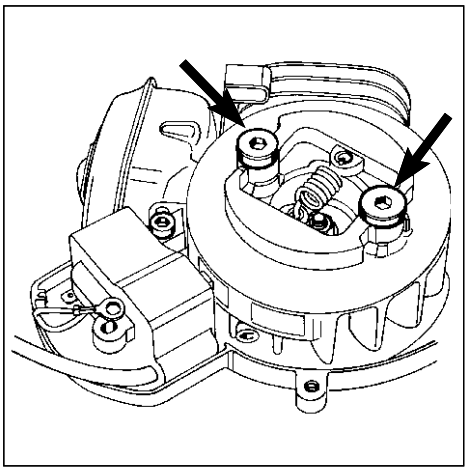
Model 240 RBD

Loosen the screws so that the drive shaft can be pulled out of the clutch housing.

Dismantle and assemble the clutch housing and its parts in the same way as described for model 250.

NOTE!

The screw that holds the drive shaft in place should be screwed in the clutch housing from the threaded side (not through the free hole) so that the drive shaft can be turned freely in the clutch housing.



Clutch

Models 322, 325

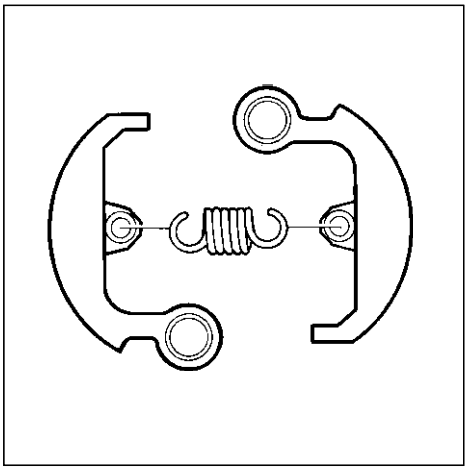
Dismantle the clutch by following the instructions in the chapter "Ignition system".

Clutch

Models 322, 325

The centrifugal clutch is bolted to the flywheel.

Follow the detailed instructions in the chapter "Ignition system" when the clutch is to be dismantled.

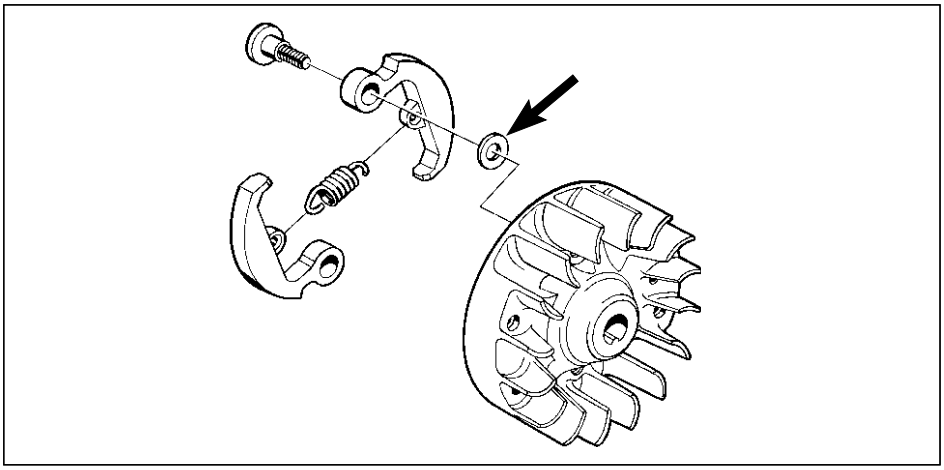


Twist apart the clutch and inspect the different parts with regard to wear or damage.

Twist apart the clutch.

Inspect the different parts with regard to wear or damage.

Pay special attention to the ends of the springs, which in addition to wear, can also show signs of cracking.

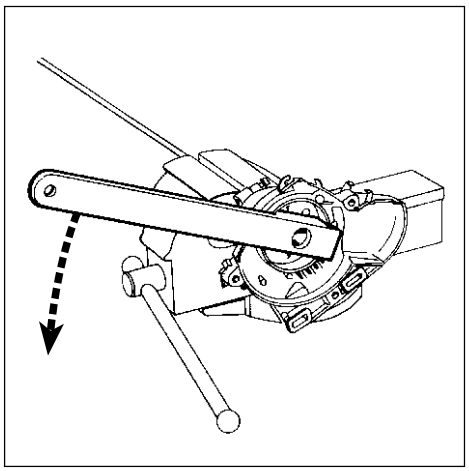


Connect the clutch shoes together with the spring.

NOTE!

Both clutch shoes should be replaced even if only one of them is showing signs of heavy wear. This is to avoid engine vibration caused by imbalance in the clutch.

Bolt the clutch on the flywheel. Do not forget the washers between the flywheel and the clutch shoes.

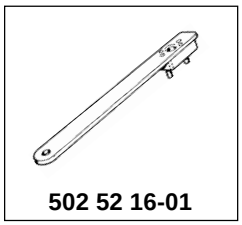


Clutch drum

Models 322/325

Separate the shaft from the clutch cover.

Dismantle the clutch drum using tool 502 52 16-01.



502 52 16-01

Clutch drum

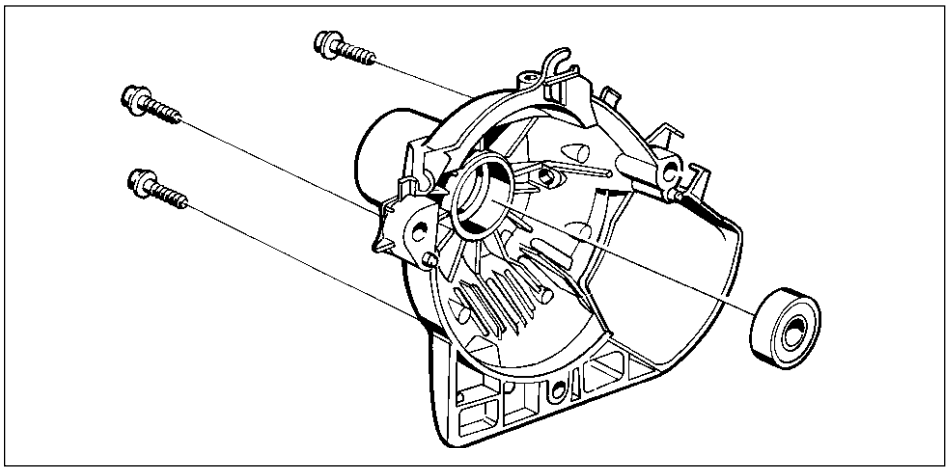
Models 322/325

Separate the shaft from the clutch cover.

Pull away the clutch cover complete with drive axle and clutch drum.

The drum is bolted on the drive axle and can be dismantled using tool 502 52 16-01.

The clutch drum should be replaced if the diameter exceeds Ø 64.0 mm.



The bearing supporting the clutch drum in the clutch cover is glued in position with Loctite. To replace the bearing, heat the cover to approx. 70°C using a hot air gun and the glue will release.

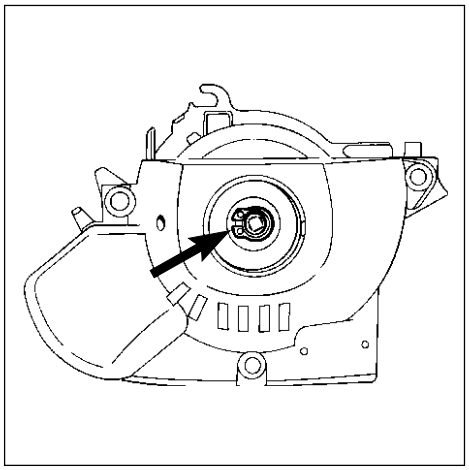
Dismantle the bearing using an appropriate punch and hammer.

NOTE!

Dismantle the shaft's mounting clamps and rubber spacer in the clutch cover so that these parts are not damaged when the cover is heated.

Assemble in the reverse order as set out for dismantling.

Use Loctite intended for mounting bearings when the bearing is mounted in the clutch cover.



Model 322C

Dismantle the clutch cover and remove the shaft's mounting parts in the cover.

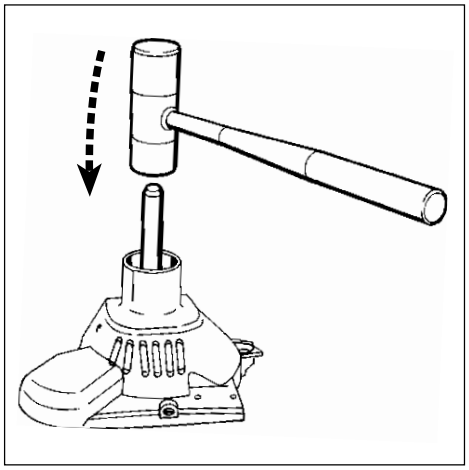
Remove the circlip.

Model 322C

Dismantle the clutch cover from the shaft.

Remove the shaft's mounting parts on the clutch cover.

Dismantle the circlip holding the clutch drum's spindle by the bearing.



Press off the clutch drum.

Replace the bearing and fit the remaining parts in the reverse order as set out for dismantling.

Now press out the clutch drum using a suitable punch and hammer.

The bearing is replaced in the same way as described above.

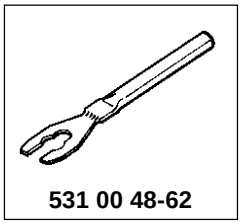
Assemble in the reverse order as set out for dismantling.

Clutch

Model 122

Dismantle all components so that the clutch is accessible.

Remove the screws and lift out the clutch.



531 00 48-62

Clutch

Model 122

Dismantle all components so that the clutch is accessible. Also refer to chapter, "Ignition system".

Remove the 2 screws that hold the clutch on the flywheel.

NOTE!

Use the tool no. 531 00 48-62 to avoid damage to the soft clutch linings.

Clean the clutch using compressed air and a brush. Do not use solvents as this can affect the linings.

Twist open the clutch.

Clean the clutch using compressed air and a brush. Do not use any form of solvent as this can affect the linings.

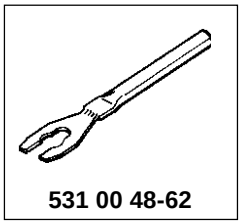
Twist open the clutch.

Check the clutch shoes and replace them if:

- The lining is cracked or if bits are missing.
- The lining is worn down to 0.5 (new lining is approx. 2 mm thick).
- The lining is oily and feels soft.
- The bearing hole is worn.

Check the springs for wear to the ends.

Assemble the clutch in the reverse order set out for dismantling and screw on the flywheel.

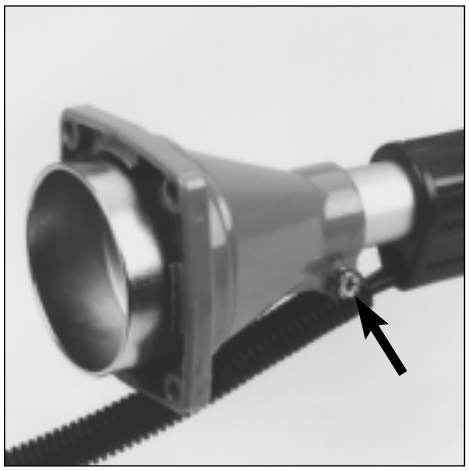


531 00 48-62

Assemble the clutch in the reverse order set out for dismantling.

Watch the following:

- Turn the clutch so that the L-markings face outwards.
- The flat washer should be positioned between the flywheel and the clutch shoes.
- Use Loctite on the screws and tighten to a torque of 10 Nm.



Clutch drum

Model 122

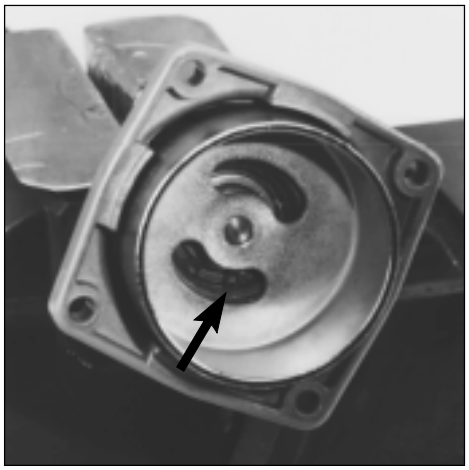
Separate the engine and clutch housing.

Clutch drum

Model 122

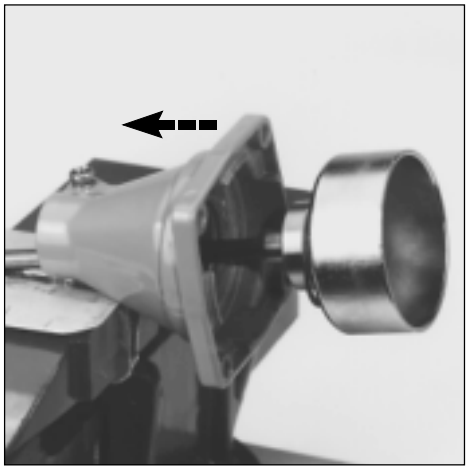
Separate the engine and clutch housing (see page 25).

Loosen the screw and pull off the clutch housing complete with drive line.



Remove the circlip and heat the clutch housing.

Remove the circlip and heat the clutch housing using a hot air gun to approx. 150 – 200°C.



Pull the clutch drum complete with bearing and drive axle out of the clutch housing.

Pull the clutch drum complete with bearing and drive shaft out of the clutch housing.

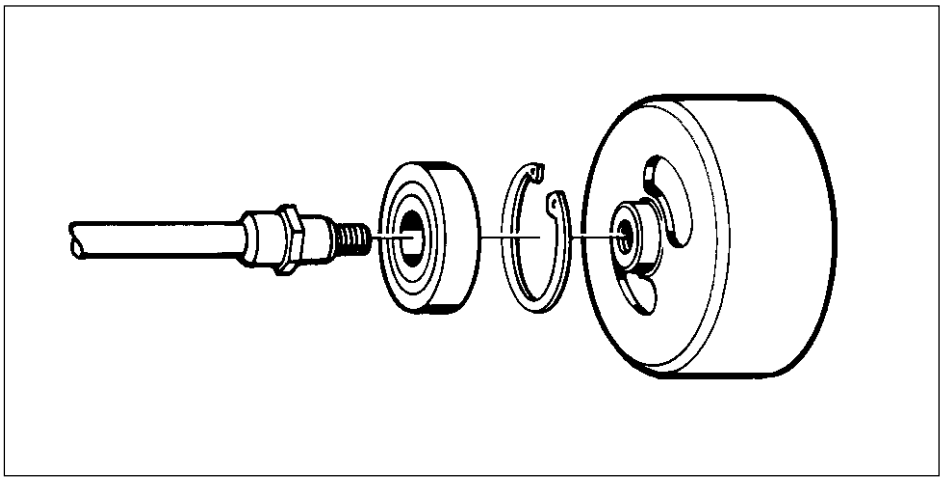
Carefully knock the clutch housing's mounting flange with a plastic mallet.

Clamp the drive shaft's hexagonal section in a vice and tap off the clutch drum using a hammer and brass punch.

Clamp the drive shaft's hexagonal section in a vice and tap off the clutch drum using a hammer and brass punch so that the clutch drum is not damaged.

NOTE!

The clutch drum can be extremely tight.



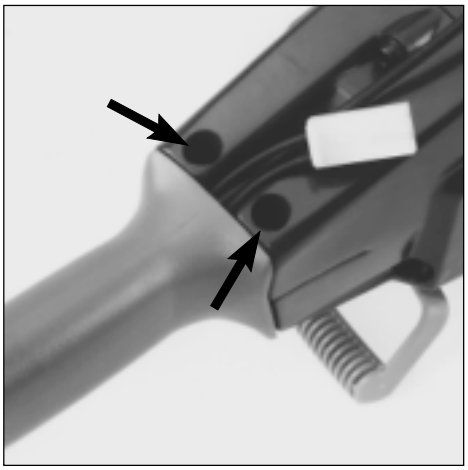
Check the clutch drum with regard to wear (inner diameter must not exceed 58 mm) and crack formation by the hub on the drum.

Fit a new clutch drum if necessary.

Assembly takes place in the reverse order set out for dismantling.

NOTE!

Do not forget the circlip between the clutch drum and the bearing.



Clutch

Model 32 and Mondo

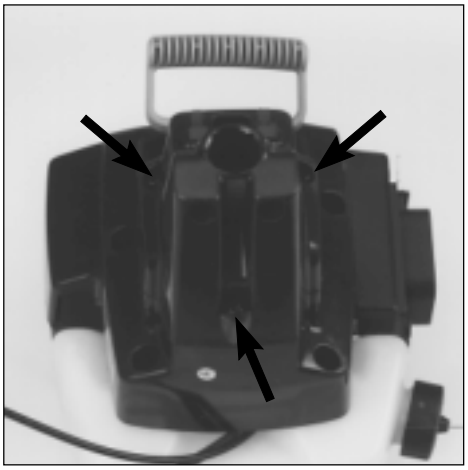
Disconnect the throttle cable and short circuit cables and dismantle the shaft from the clutch cover.

Clutch

Model 32 and Mondo

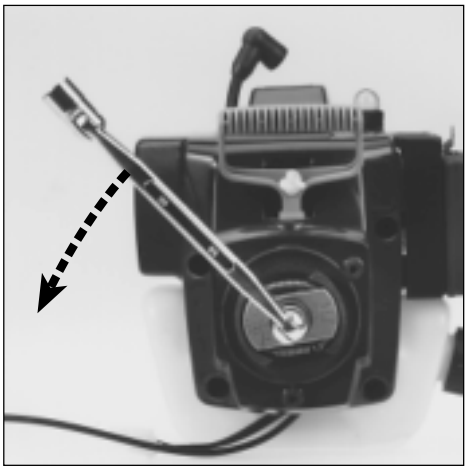
Disconnect the throttle cable and short circuit cables (see page 54).

Loosen the screws that hold the shaft and dismantle it from the clutch cover.

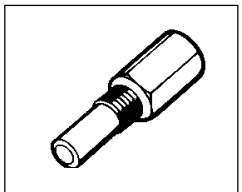


Remove the screws and lift off the clutch cover.

Remove the screws that hold the clutch cover on the starter and then lift off the clutch cover.

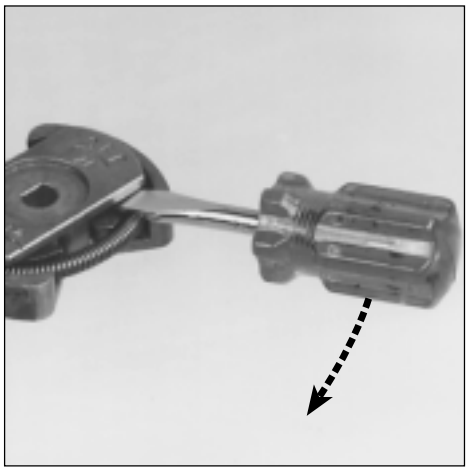


Dismantle the clutch.



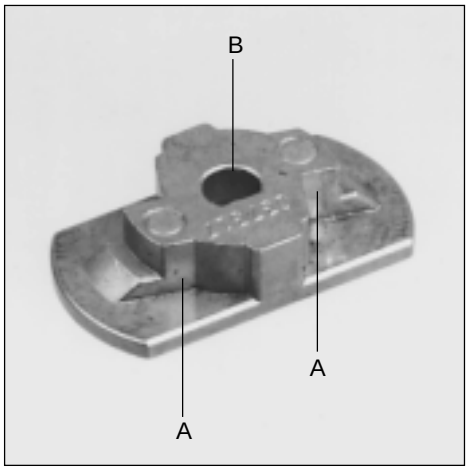
504 91 06-05

Replace the spark plug with the piston stop (504 91 06-05) and remove the nuts holding the clutch. (1/2" spanner.)



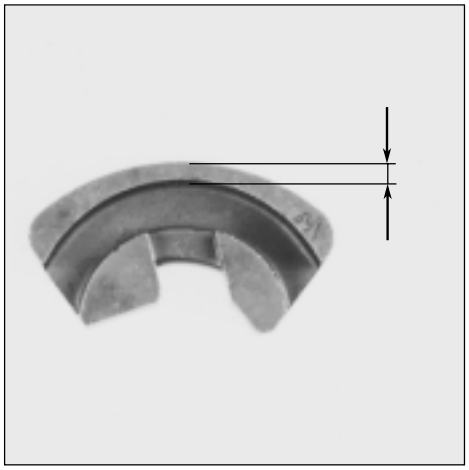
Strip the clutch.

Strip the clutch using a screwdriver if necessary.



Check the clutch hub for wear.

Check the clutch hub for wear to the guide arms (A) and play on the axle hole (B).



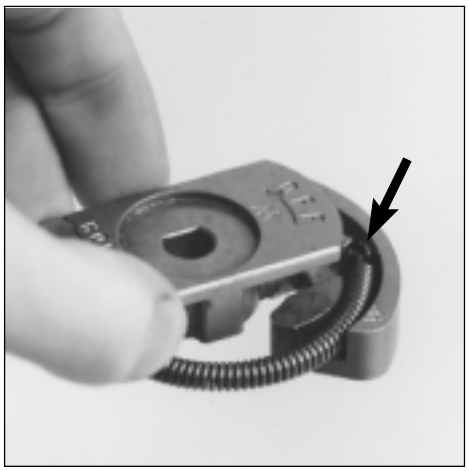
Check the clutch shoes for wear.

Check the clutch shoes for wear. There must be at least 1 mm of material remaining at the most worn spot.

Also check the guide slot for wear.

NOTE!

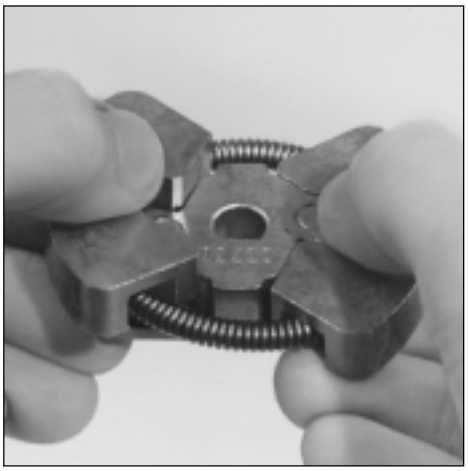
When replacing both shoes must be replaced.



First position the spring in one of the clutch shoes and then the clutch hub.

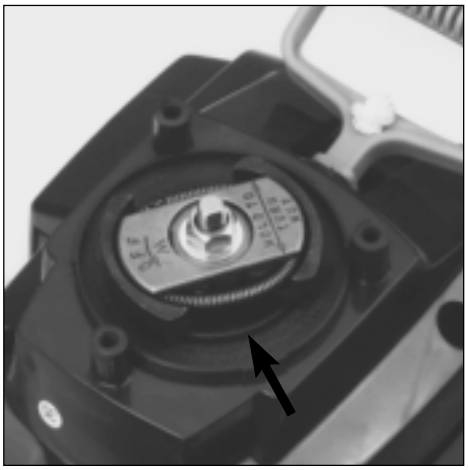
When assembling the clutch the spring joining point should be positioned in the centre of one of the clutch shoes.

Then position the hub over the clutch shoe.



Fit the remaining clutch shoe.

Turn the clutch and position the remaining clutch shoe over the spring and press onto the hub using your thumbs.



Assemble the clutch and the other parts in the reverse order.

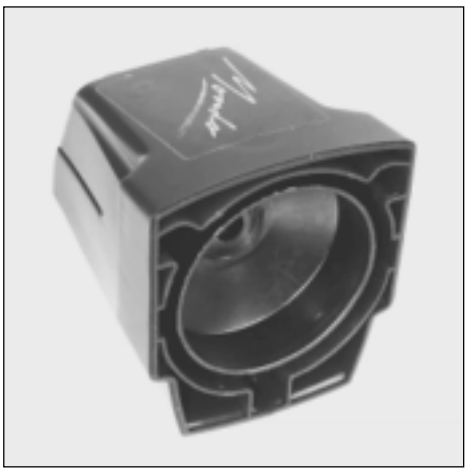
Assemble the clutch and the other parts in the reverse order set out for dismantling.

NOTE!

Do not forget the large flat washer between the clutch and the crankcase.

The washer acts as a support for the clutch shoes, and if missing the shoes can be forced out of the hub when the engine is run causing damage to the crankcase.

Turn the clutch so that the text on the hub faces outwards.



Clutch drum

Model 32 and Mondo

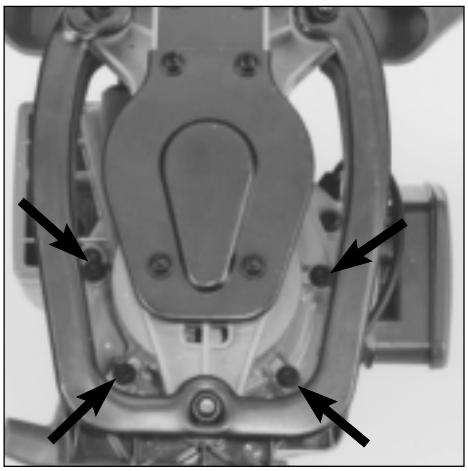
Replace the clutch drum, bearing and clutch housing as a complete unit.

Clutch drum

Model 32 and Mondo

If the clutch drum and/or its bearing are damaged they must be replaced as a complete unit with the clutch housing.

Assembly takes place in the reverse order set out for dismantling.



Clutch

Model 18H

Remove the 4 screws and move the cutting equipment to one side.

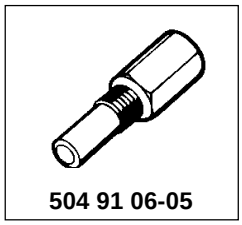
Clutch

Model 18H

The cutting equipment must be dismantled from the engine body to access the clutch.

Remove the 4 screws and move the cutting equipment to one side.

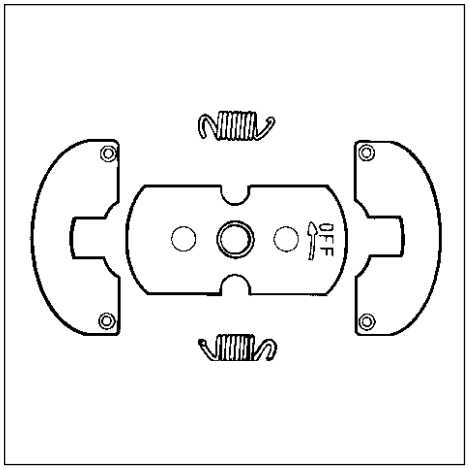
Dismantle the clutch using an appropriate punch and hammer.



504 91 06-05

Dismantle the clutch from the crankshaft using an appropriate punch and hammer.

If the clutch is sitting extremely tight and the compression pressure is not sufficient as a stop, the spark plug can be replaced by the piston stop no 504 91 06-05.



Dismantle the clutch and inspect the parts with regard to damage or wear. Replace requisite parts and assemble in the reverse order as set out for dismantling.

Dismantle the clutch by prying out the springs with a small screwdriver.

Inspect the clutch with regard to damage and wear.

NOTE!

Both clutch shoes should be replaced at the same time to prevent imbalance.

Assemble the clutch in the reverse order as set out for dismantling.

Clutch drum

Model 18H

See chapter "Attachments".

Clutch drum

Model 18H

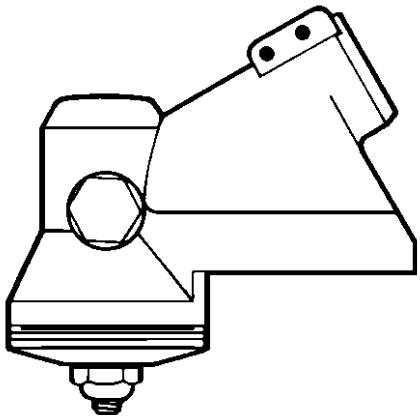
See chapter "Attachments".

Technical data

Model	Engage speed r/min	Wear limit clutch drum	Wear limit clutch shoe
Mondo	4,000	–	–
122L	3,900	Ø 58.0	Min. 0.5 mm of lining remaining
Mondo Max	4,000	–	–
225L/LD	3,700	Ø 64.5	Max 1 mm wear per shoe
232L	3,800	Ø 64.5	Max 1 mm wear per shoe
Mondo Mega	4,000	–	–
225R/RD	3,700	Ø 64.5	Max 1 mm wear per shoe
232R	3,800	Ø 64.5	Max 1 mm wear per shoe
322	3,800	Ø 64.0	Max 1 mm wear per shoe
325	3,800	Ø 64.0	Max 1 mm wear per shoe
235R	3,800	Ø 64.5	Max 1 mm wear per shoe
240R	3,700	Ø 65.0	Max 1 mm wear per shoe
245R	3,700	Ø 65.0	Max 1 mm wear per shoe
250R	4,300	Ø 70.0	Max 1 mm wear per shoe
245RX	3,700	Ø 65.0	Max 1 mm wear per shoe
250RX	4,300	Ø 70.0	Max 1 mm wear per shoe
252RX	4,300	Ø 70.0	Max 1 mm wear per shoe
265RX	3,500	Ø 80.0	Max 1 mm wear per shoe
240RBD	3,600	Ø 64.5	Max 1 mm wear per shoe
235P	3,900	Ø 64.5	Max 1 mm wear per shoe
250PS	4,300	Ø 70.0	Max 1 mm wear per shoe
225E	3,700	Ø 64.5	Max 1 mm wear per shoe
18H	4,600	Ø 62.5	Max 1 mm wear per shoe
225H60/75	5,400	Ø 64.5	Max 1 mm wear per shoe
225AI15, 225AI25	5,400	Ø 64.5	Max 1 mm wear per shoe

Angle gear

5.

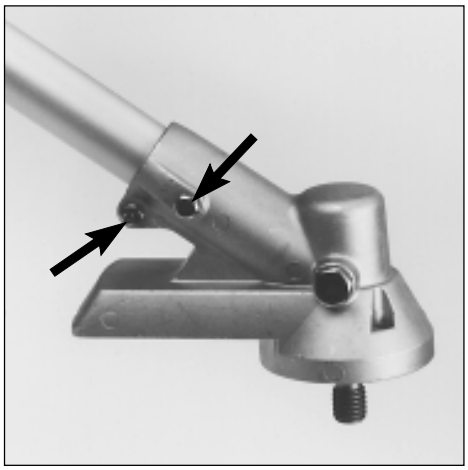


Contents

The angle gear has two purposes:

The first is to gear down the engine's high speed to better suit the lower speed a blade or trimmer requires to work efficiently.

Secondly, the angle gear contributes towards the operator's working stance so that it is comfortable and at the same time efficient. In other words, the power from the engine via the drive shaft shall be angled so that the cutting equipment works parallel with the ground.



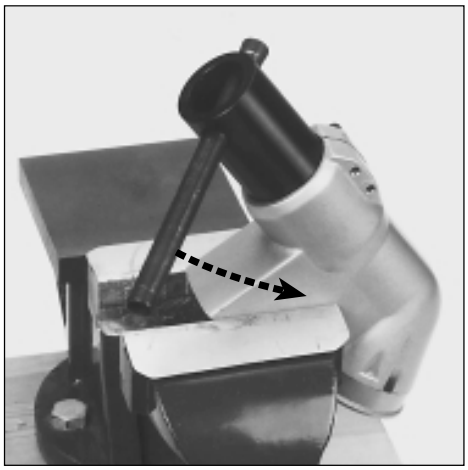
All models

Dismantle the cutting equipment (blade, trimmer, etc.) with its guard.

Now loosen the screws/screw that hold the angle gear on the tube.

Remove the angle gear from the tube.

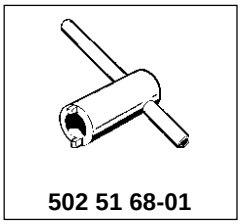
Use a screwdriver if necessary to split the clamping bracket.



Dismantling

Model 265

Dismantle the stop sleeve/seal holder.



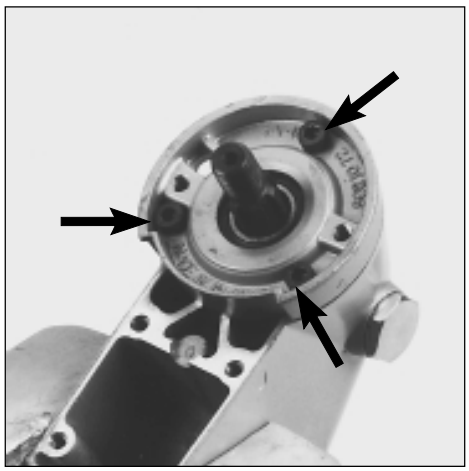
502 51 68-01

Dismantling

Model 265

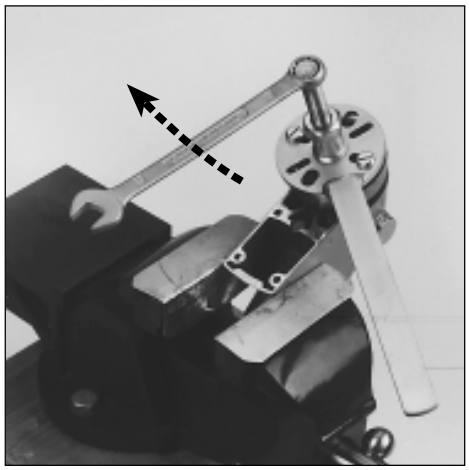
Dismantle the combined stop sleeve and seal holder for the input shaft using the tool 502 51 68-01.

NOTE!
Press the tool firmly in the stop sleeve so that the slot is not damaged when dismantling.

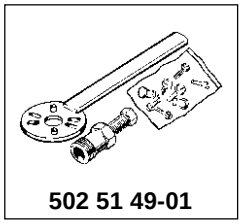


Remove the screws.

Remove the 3 screws that hold the seal holder cover on the gear housing.



Dismantle the seal holder cover.

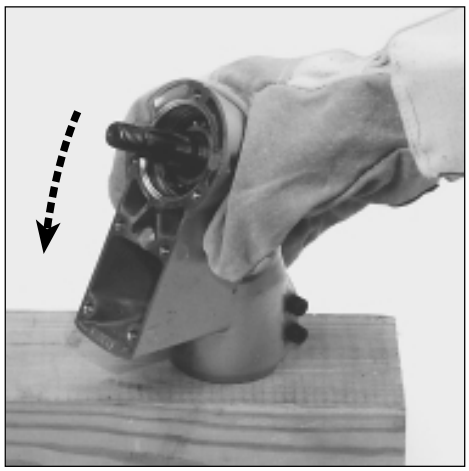


502 51 49-01

Dismantle the seal holder cover using puller no. 502 51 49-01. Bearing puller no. 504 90 90-01 can also be used.

Tip!

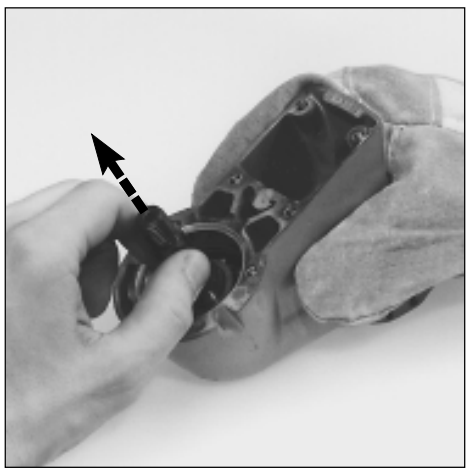
Clamp the puller arms in a vice if the cover is really tight and the puller loses its grip.



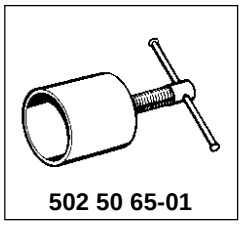
Heat the gear housing and knock it with a wooden block so that the input shaft falls out.

Clean all grease from the gear housing and heat the housing to approx. 150°C.

Knock the gear housing with a wooden block so that the input shaft with bearing falls out.



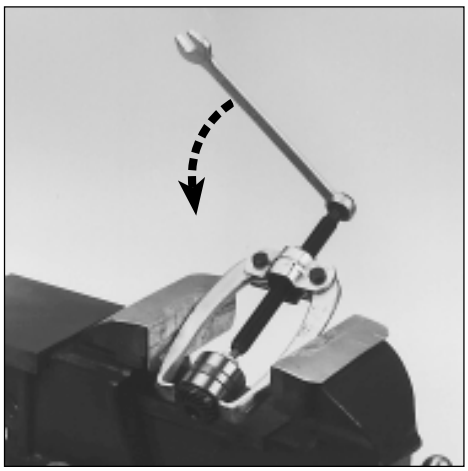
Lift out the output shaft.



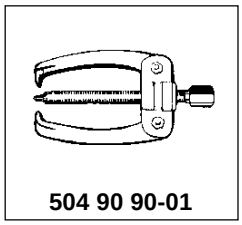
502 50 65-01

Now dismantle the output shaft and bearing, while the gear housing is still warm.

Use puller no. 502 50 65-01 if necessary on older versions of the angle gear.



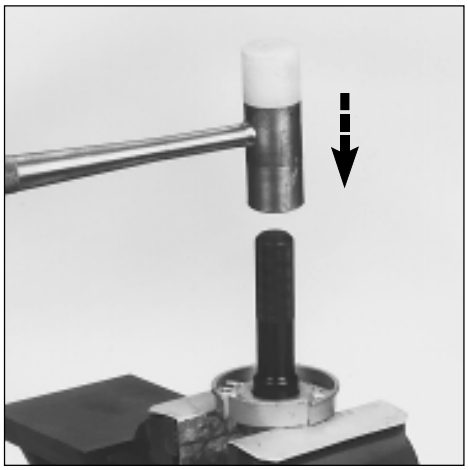
Remove the bearings from the input and output shafts.



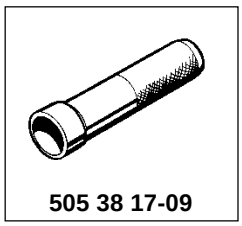
504 90 90-01

Remove the circlip on the input shaft and remove the bearing using puller no. 504 90 90-01.

Dismantle the bearing on the output shaft in the same way.

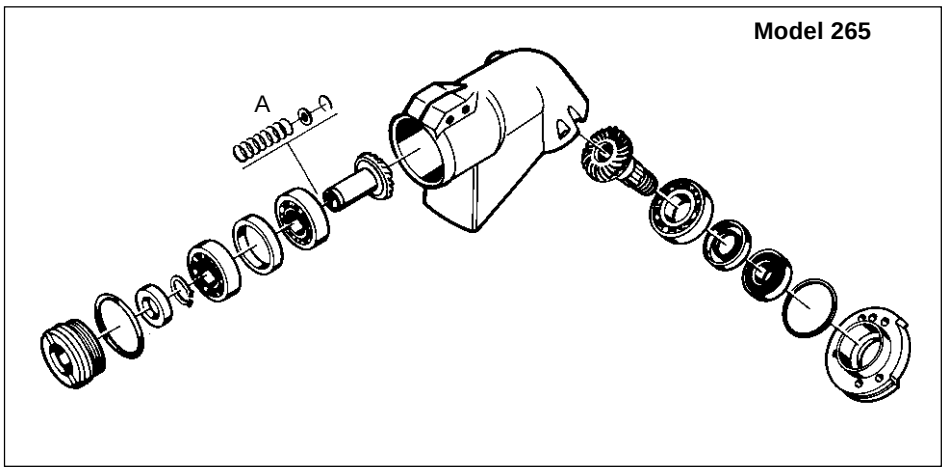


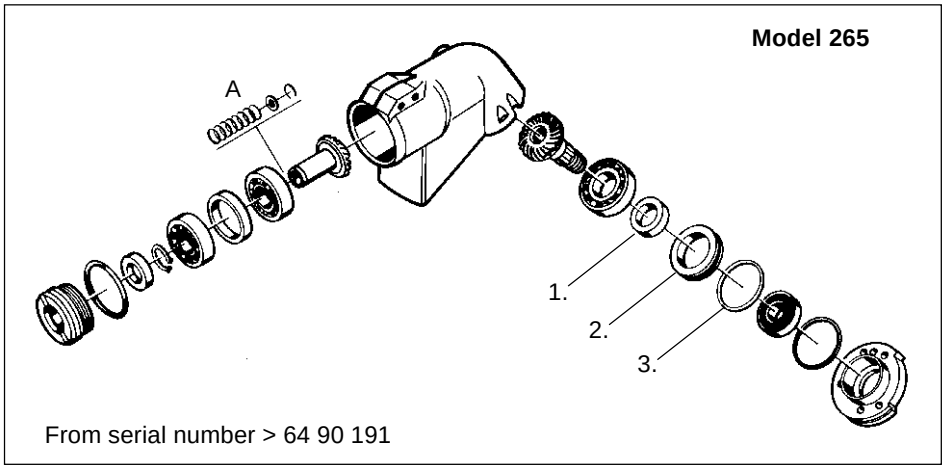
Remove the bearing and sealing ring from the seal holder cover.



505 38 17-09

Heat the seal holder cover and remove the bearing and sealing ring at the same time using punch no. 505 38 17-09.





From serial number > 64 90 191

Assembling

Model 265

Fit the bearings on resp. shafts. It's easier if the bearing is heated to approx. 100°C.

NOTE!
Do not forget the circlip that holds the bearing on the input shaft.

Heat the gear housing to approx. 150°C and insert the output shaft first and then the input shaft.

Make sure the bearing bottoms in its seating.

The parts (A) ***are only supplied with spare part gears.*** This is so the gears can be fitted on the old 165R where the drive axle also had a spline on the clutch drum.

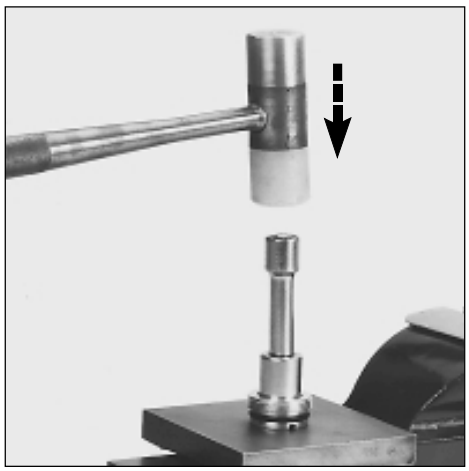
The parts (A) prevent the drive axle from sliding down through the pinion gear towards the gear on the blade axle. Mounted inside the pinion gear axle.

In those cases the drive axle is threaded by the clutch drum these parts are not required.

From serial number 64 90 191 the sealing ring has been removed and replaced with the three parts listed below.

1. Steel spacer
2. Aluminium ring
3. O-ring

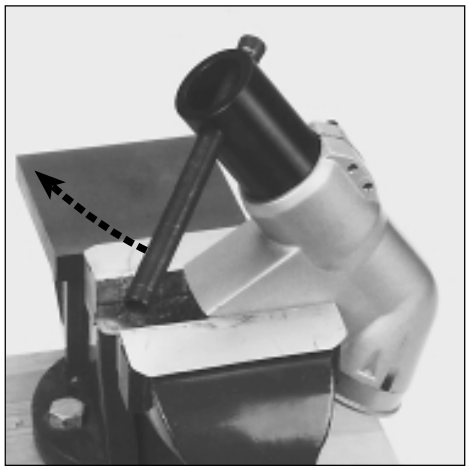
The operating temperature falls considerably when the sealing ring is removed and is replaced by the new components. In addition, the steel spacer prevents the blade axle from shifting upwards, e.g. with impact from below.



Change the sealing ring in the stop sleeve and change the O-ring if necessary.

Fit a new sealing ring in the stop sleeve. Position the seal so that the scraper edge faces in towards the gear!

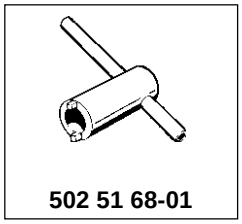
Use a suitable punch so that the sealing ring is not damaged.



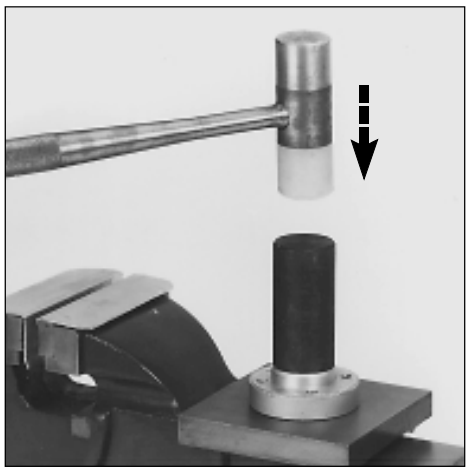
Screw in the stop sleeve.

Screw in the stop sleeve using tool no. 502 51 68-01. Make sure the lugs on the tool are pressed well into the slots in the stop sleeve when tightening so that the slots are not damaged.

Tightening torque: 45 Nm.



502 51 68-01

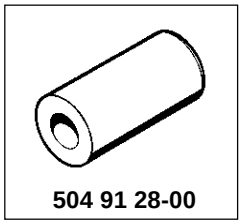


Fit a new bearing and new sealing ring in the seal holder cover.

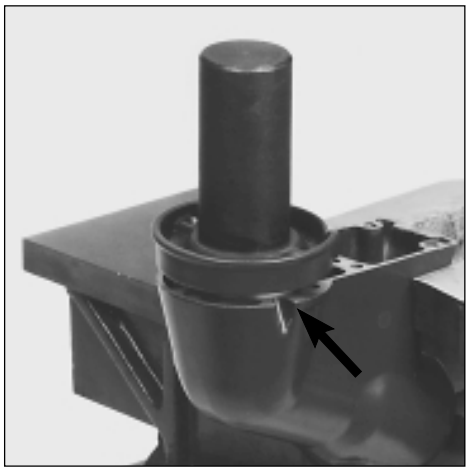
Heat the seal holder cover to approx. 150°C and insert a new bearing in the bearing seating.

Fit a new sealing ring using punch no. 504 91 28-00.

Turn the sealing ring so that the scraper edge faces the gear.



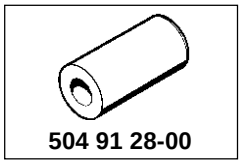
504 91 28-00



Change the seal//O-ring if necessary and assemble the seal holder cover on the gear housing using a suitable punch.

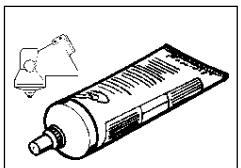
NOTE!
Turn the cover so the holes for the locking pin are correctly positioned.

Use Loctite on the screws and tighten to a torque of 9 Nm.



504 91 28-00

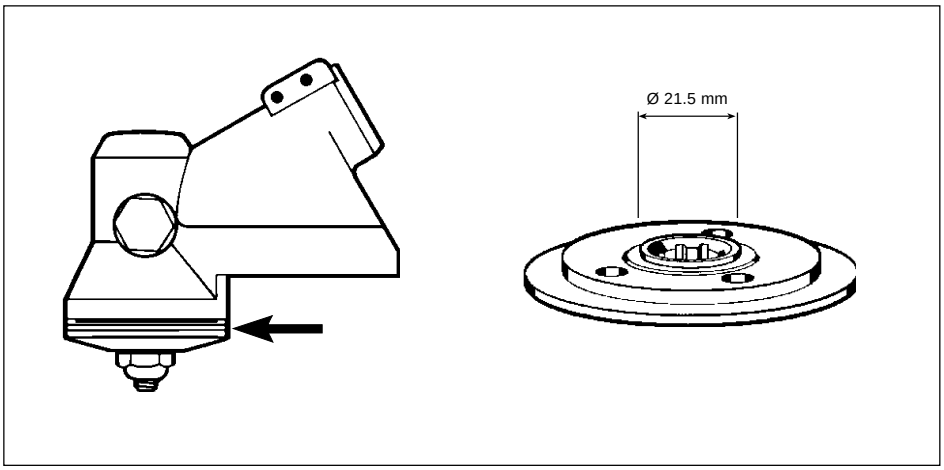
Fill the gear housing 3/4 full using special grease.



503 97 64-01

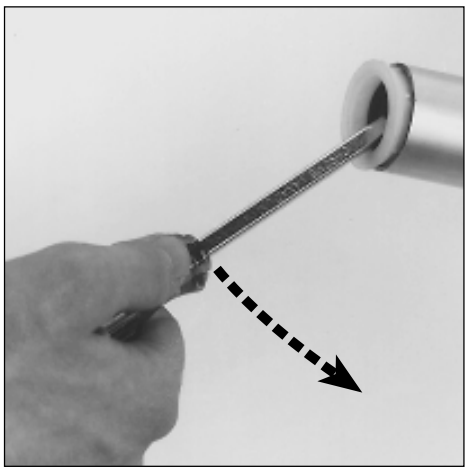
Remove the plug and fill the gear housing 3/4 full with special grease no. 502 51 27-01.

WARNING!
Too much grease can mean it is forced passed the sealing rings.
The temperature in the gear can also be too high.



On later models of the angle gear (from serial number 62 60 067) another type of drive disc has been fitted to prevent grass and dirt from penetrating into the angle gear and destroying the sealing ring. The new drive disc has order no. 502 25 41-02.

It can be fitted to angle gears that have cover with order no. 502 10 72-02 and 502 10 72-03. The centre hole in the cover is Ø 22 mm.



Check the sealing ring in the tube (later models).

Replace if necessary.

Before the angle gear is fitted check that the sealing ring on the tube is undamaged. When replacing pry the seal holder out using a screwdriver.

Fit a new sealing ring with the scraper edge facing the angle gear.

Dismantling, assembling

Models 250, 240/245

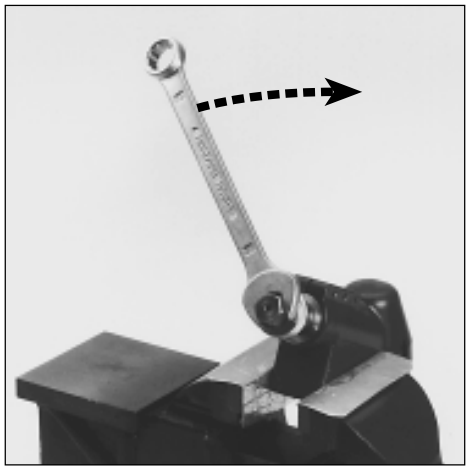
Remove the cover, O-ring and washer.

Dismantling, assembling

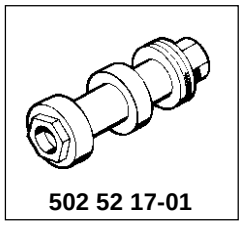
Models 250, 240/245

Remove the 3 screws holding the cover.

Lift off the cover, O-ring (240/245) and washer positioned against the bearing.



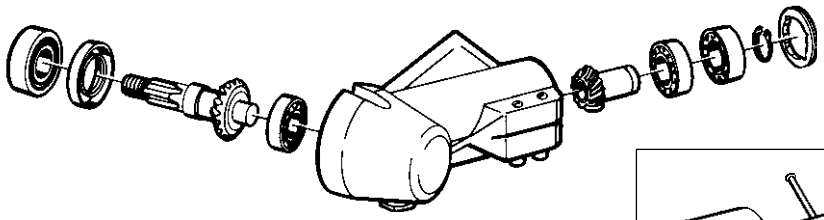
Undo the ring nut.

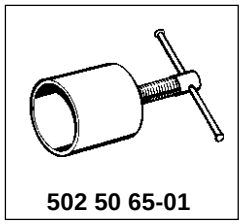


502 52 17-01

Undo the ring nut holding the input shaft in position using tool no. 502 52 17-01.

Model 250





502 50 65-01

Heat the gear housing and dismantle the input and output shafts in the same way as described for model 265.

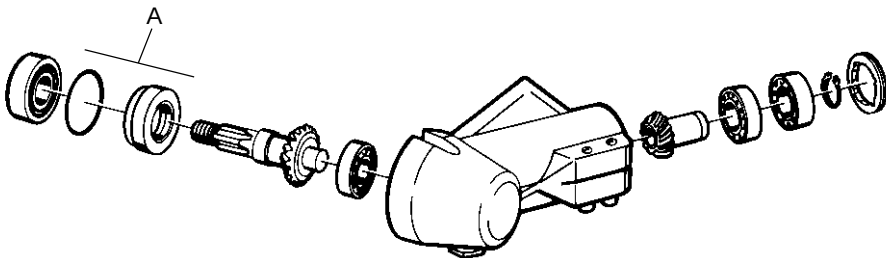
NOTE!
The input shaft with drive gear must be dismantled first. Use puller no. 502 50 65-01 when the output shaft is dismantled.

Replace damaged parts.

Assemble the angle gear in the reverse order set out for dismantling.

Fit the bearings on respective axles. It is easier if the bearing is heated to approx. 100°C.

Model 250



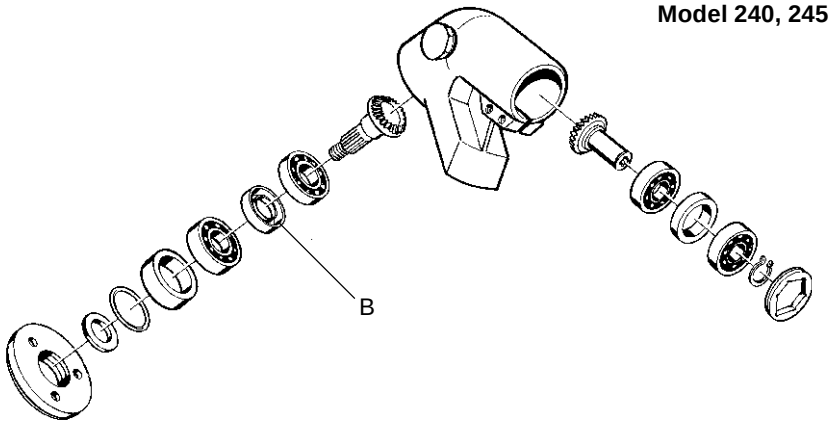
Serial number > 710 00 065 (250RX)
Serial number > 710 00 122 (250R)

NOTE!
Do not forget the circlip holding the bearing on the input axle. Make sure the bearing bottoms in its seating.

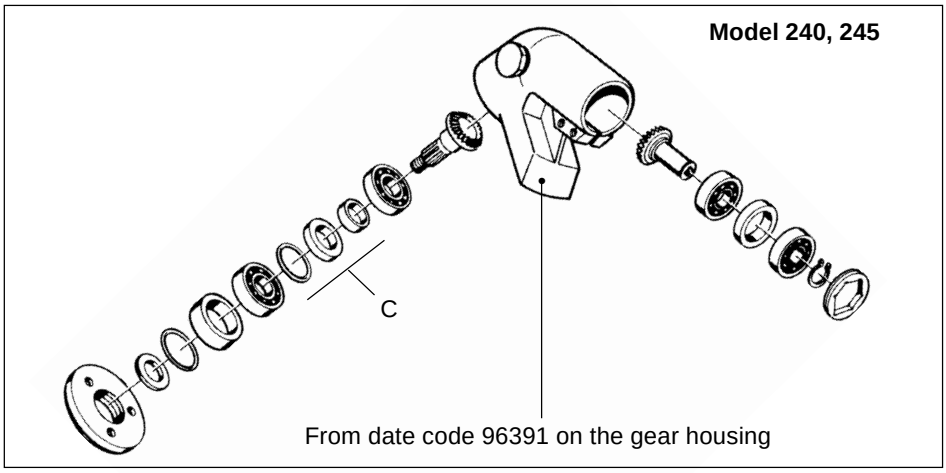
Heat the gear housing to approx. 150°C and first lift the output axle in position and then the input axle. Make sure the bearing bottoms in its seating.

NOTE!
The sealing ring on later models has been replaced by an O-ring and an aluminium sleeve (A).

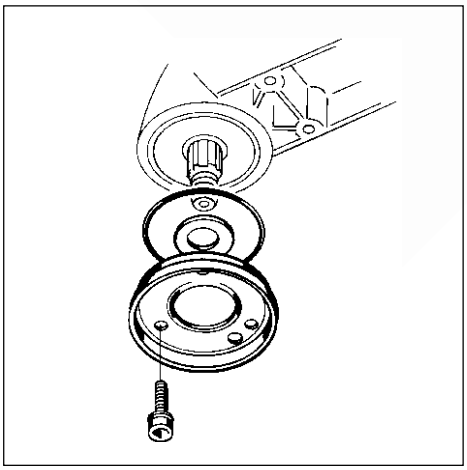
Model 240, 245



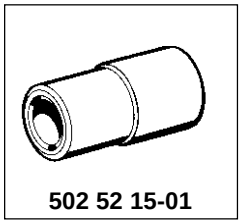
NOTE!
On new designs of the angle gear for model 240/245 the sealing ring (B) has been replaced with an O-ring, an aluminium ring and a steel spacer.



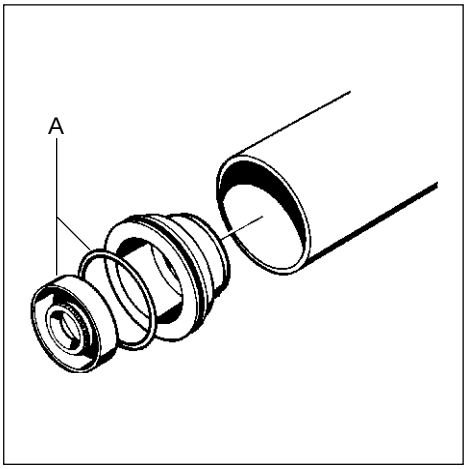
The operating temperature in the angle gear falls considerably when the sealing ring is removed and replaced by the new components (C). In addition, the steel spacer prevents the blade from shifting upwards, e.g. with impact from below.



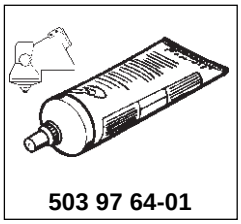
Fit the cover.



NOTE!
Use the centring sleeve no. 502 52 15-01 to centre the cover on the gear housing.
Use Loctite on the screws.



Check and possibly replace the sealing ring and O-ring (A) at the ends of the shaft.

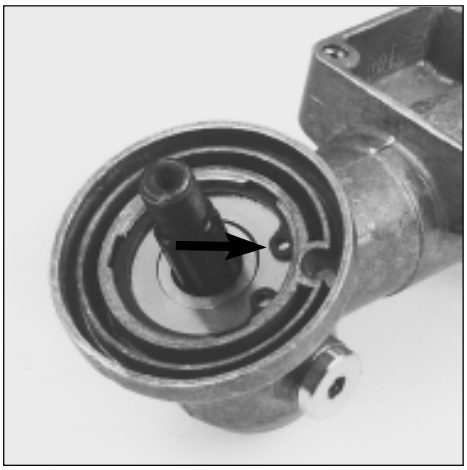


Check that the sealing ring and O-ring (A), at the end of the shaft, are undamaged before the gear is fitted.

Do not forget to fill the gear housing 3/4 full with special grease 503 97 64-01.

WARNING!

Too much grease can mean it is forced passed the sealing rings. The temperature in the gear can also be too high.



Dismantling, assembling

Models 225/232

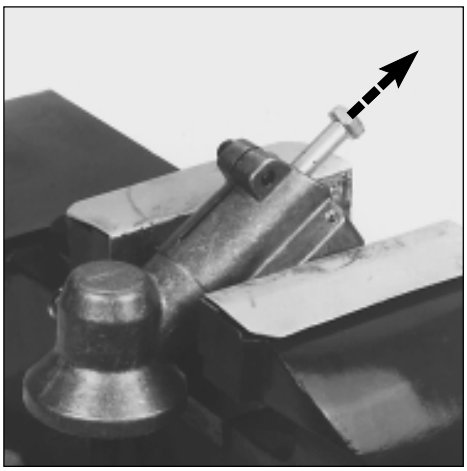
Remove the circlip and washer on the output shaft.

Dismantling, assembling

Models 225/232

Dismantle the angle gear from the shaft.

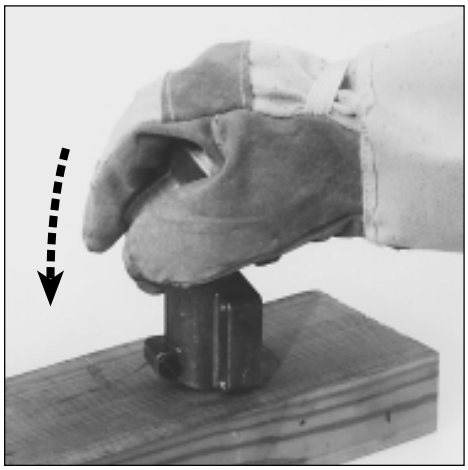
Remove the circlip and washer on the output shaft.



Remove the plastic washer and circlip on the input shaft.

Remove the plastic seal on the input shaft using a suitable screw (M8).

Now remove the large locking ring holding the bearing in position in the gear housing.



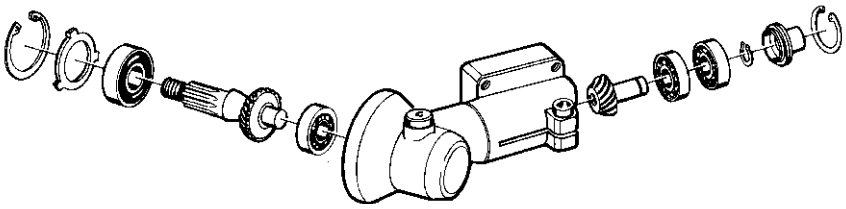
Heat the gear housing and first dismantle the input shaft and then the output shaft.

Heat the entire gear housing using a hot air gun to about 150–200°C.

First dismantle the input shaft by knocking the gear housing with a wooden block until the shaft and bearing fall out.

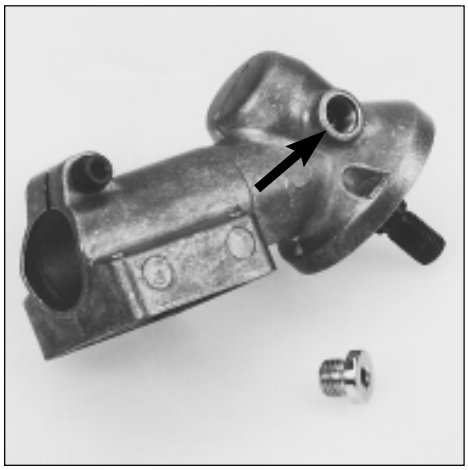
Then dismantle the output shaft in the same way.

Model 225/232

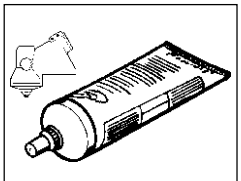


Replace worn or damaged parts and assemble the angle gear in the reverse order set out for dismantling.

Heat the gear housing to about 150–200°C and start by fitting the output shaft.



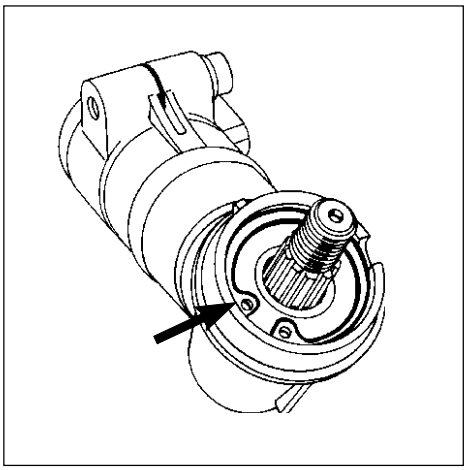
Fill the gear housing with grease.



503 97 64-01

Do not forget to fill the gear housing 3/4 full using special grease. 503 97 64-01.

WARNING!
Too much grease can mean it is forced passed the sealing rings. The temperature in the gear can also be too high.

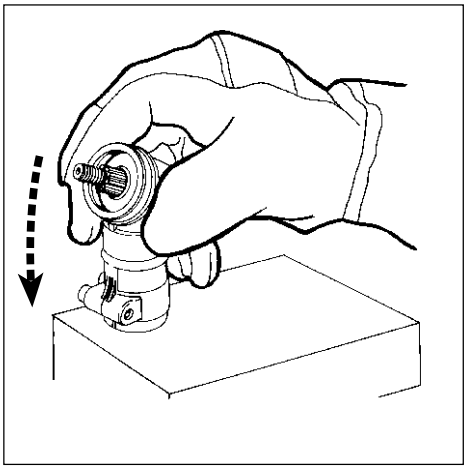


Dismantling, assembling

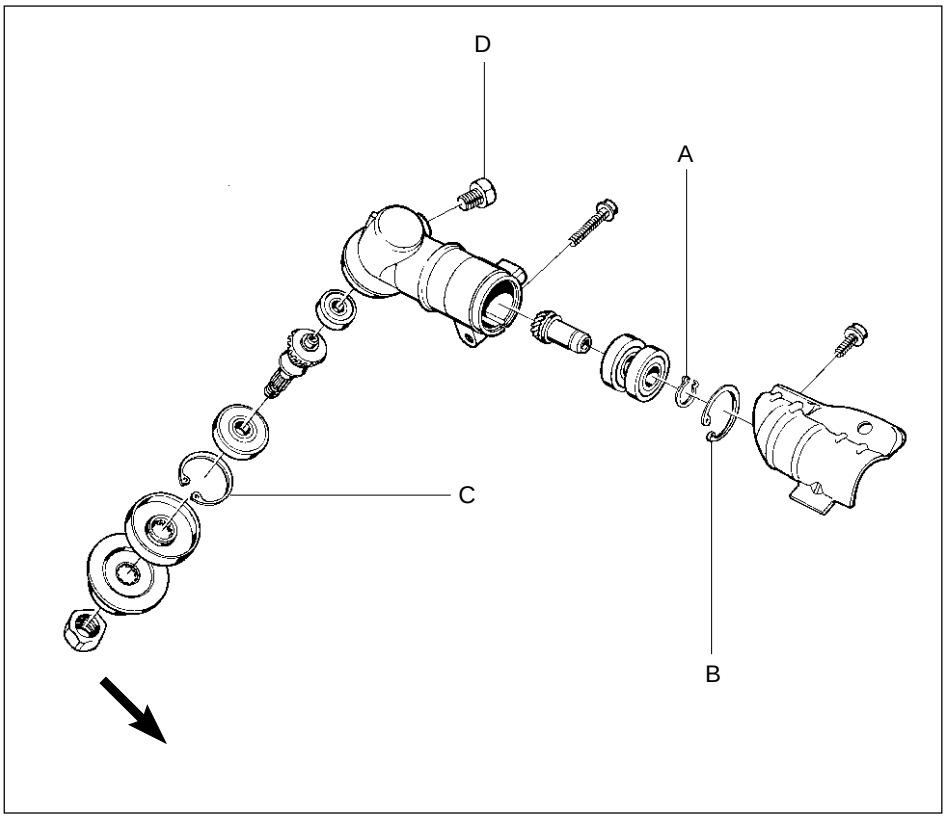
Models 322/325

Remove the angle gear from the shaft.

Remove the circlips holding the bearings on the input respective output axles.



Heat the entire angle gear to approx. 110°C and first dismantle the input axle and then the output axle.



Dismantling, assembling

Models 322/325

1. Remove the cutting equipment and guard.
2. Loosen the screw holding the angle gear on the shaft and remove the angle gear.
3. Remove the circlips holding the bearings on the output axle (illustrated) and on the input axle using the circlip pliers.

Heat the entire angle gear using a hot air gun to approx. 110°C.

Knock the gear against a wooden block so that the input axle and the bearing fall out.

Now lift out the output axle.

Wear protective gloves.

Assembly

Clean all component parts and replace if damaged or worn.

Fit the bearings on respective axles. This is easier if the bearings are heated to approx. 110°C using a hot air gun.

NOTE!
Do not forget the circlip (A) holding the bearing on the input axle.

Heat the gearbox to approx. 110°C and first place the output axle in position and then the input axle.

Make sure the bearing bottoms in its seating.

Fit the circlips (B) and (C). Make sure they lie correctly in their grooves.

Assemble remaining parts in the reverse order as set out for dismantling.

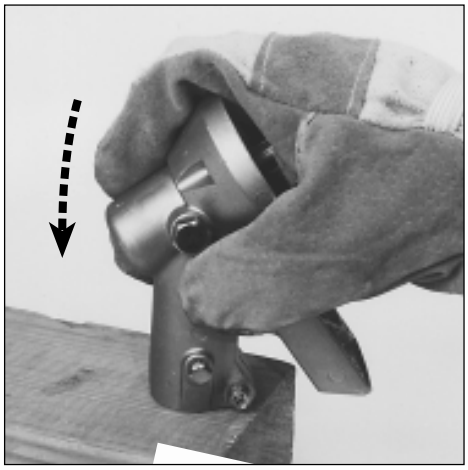
NOTE!
Do not forget to fill the gear housing to approx. 3/4 with gear housing grease 503 97 64-01 once the plug (D) has been removed.

Dismantling, assembling

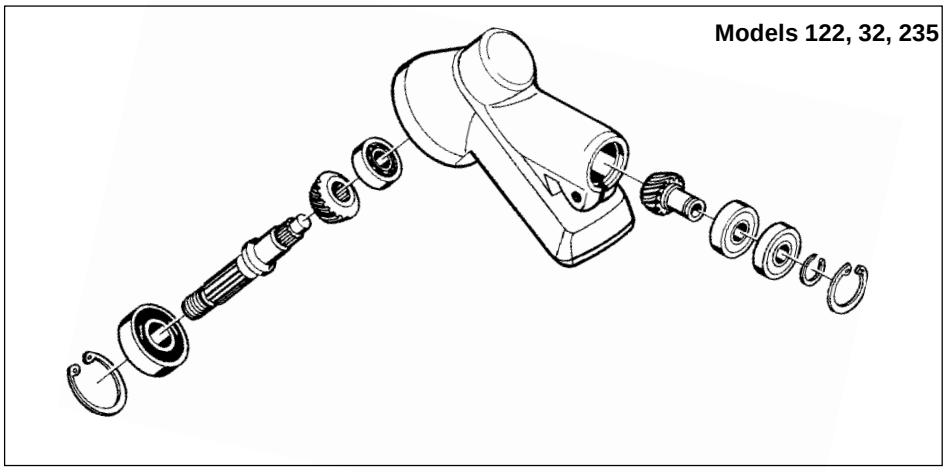
Models 122, 32, 235

Remove the circlips from the input and output shafts.

Heat the gear housing.



First dismantle the input shaft and then the output shaft.



Models 122, 32, 235

Dismantling, assembling

Models 122, 32, 235

Remove the circlips holding the bearings on the input and output shafts.

Heat the entire gear housing using a hot air gun to about 150–200°C.

First dismantle the input shaft by knocking the gear housing with a wooden block until the shaft and bearing fall out.

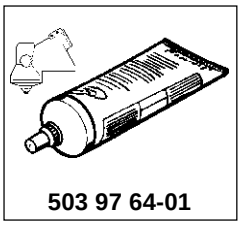
Then dismantle the output shaft in the same way.

NOTE!
Unscrew the stop screw enough so that it does not prevent the shaft from sliding out.

Replace damaged parts.

Assemble the angle gear in the reverse order set out for dismantling.

Fill the gear housing 3/4 full using special grease. 502 97 64-01.



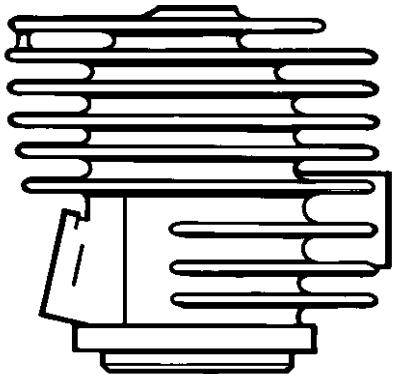
503 97 64-01

Technical data

Model	Gear ratio	Axle thread	Blade hole diameter mm	Blade diameter mm	Angle degrees	Max. axle speed rpm
Mondo	1:1	3/8"x24(R)	–	–	30°	9,000
122L	1:1.33	M10x1.25	–	–	35°	8,100
Mondo Max	1:1.23	3/8"x24(L)	–	–	30°	7,300
225L/LD	1:1.40	M10x1.25	–	–	35°	8,500
232L	1:1.40	M10x1.25	_	_	35°	8,500
Mondo Mega	1:1.33	3/8"x24(L)	20.0	200	30°	7,300
225R/RD	1:1.40	M10x1.25	20.0	200–255	35°	8,500
232R	1:1.40	M10x1.25	20.0	200–275	35°	8,500
322	1:1.46	M10x1.25	25.4	200–255	30°	8,560
325	1:1.46	M10x1.25	25.4	200–255	30°	8,560
235R	1:1.53	M12x1.75	20.0	200–300	35°	7,800
240R	1:1.36	M12x1.75	20.0	200–300	30°	9,190
245R	1:1.36	M12x1.75	20.0	200–300	30°	9,190
250R	1:1.36	M12x1.75	20.0	200–300	30°	9,190
245RX	1:1.36	M12x1.75	20.0	200–300	30°	9,190
250RX	1:1.36	M12x1.75	20.0	200–300	30°	9,930
252RX	1:1.36	M12x1.75	20.0	200–300	30°	10,300
265RX	1:1.26	M12x1.75	20.0	200–300	25°	9,120
240RBD	1:1.40	M10x1.25	20.0	200–300	35°	7,800
235P	–	–	–	–	–	–
250PS	–	–	–	–	–	–
225E	1:1.40	M10x1.25	25.4	–	35°	8,500
18H	1:5.7	–	–	–	–	–
225H60/75	1:7.25	–	–	–	–	–
140B/141B	–	–	–	–	–	–
132HBV	–	–	–	–	–	–
225BV/225HBV	–	–	–	–	–	–

Cylinder and piston

6.



Contents

The cylinder and piston are two components that are exposed to the most strain in the engine. For example, they should withstand high speed, large changes in heat and high pressure. In addition, they should withstand wear. Despite the hard working conditions serious cylinder and piston failures are quite unususal. Some of the reasons behind this are the new coating materials in the cylinder bore, new lubricants and improved manufacturing techniques.

Cleanliness is extremely important when servicing these components. We therefore recommend that the cylinder and the area around it is cleaned thoroughly before it is dismantled from the crankcase.

With regard to Husqvarna E-TECH see chapter "Crankshaft and crankcase".

Dismantling

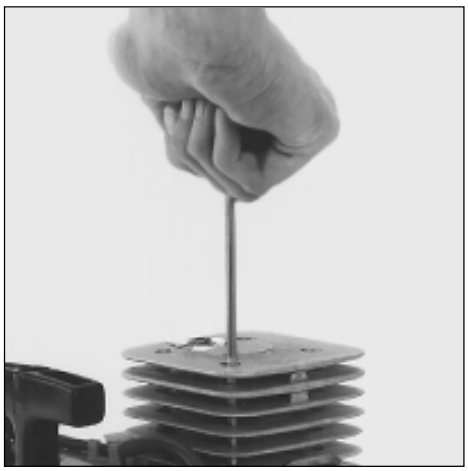
General

The dismantling routines are basically the same for all models. However, in those cases where the procedure deviates for a particular model, this is specially described.

Dismantle the following:

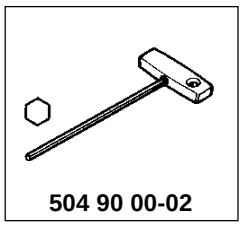
Cylinder cover, air filter, carburettor, muffler, starter and on some models the ignition module and flywheel.

See respective sections in the Workshop Manual for detailed instructions.



Models 250, 265

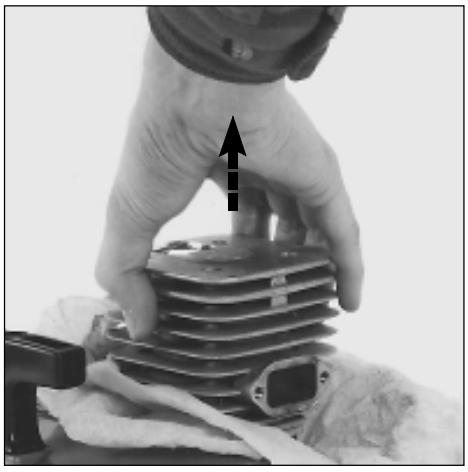
Loosen the 4 screws holding the cylinder on the crankcase.



504 90 00-02

Models 250, 265

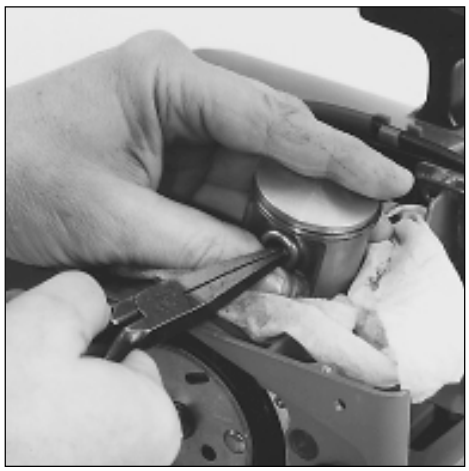
Dismantle all the components around the cylinder and loosen the 4 screws holding the cylinder on the crankcase. Use the allen key 504 90 00-02.



Lift off the cylinder.

Lift up the cylinder a little and place a cloth in the crankcase opening to prevent dirt from falling into the crankcase.

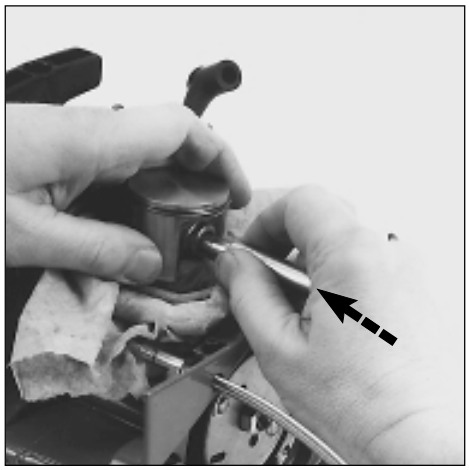
Lift off the cylinder from the piston.



Remove the circlips on the gudgeon pin.

Use flat nose pliers to remove the circlips on the gudgeon pin.

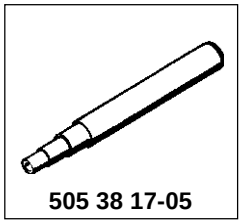
Keep your thumb over the circlip to stop it from flying away.



Dismantle the piston.

Press out the gudgeon pin from the piston using punch 505 38 17-05.

If the gudgeon pin is difficult to remove the piston can be carefully heated.



505 38 17-05

Cleaning, inspection models 250, 265

After dismantling clean the different parts:

1. Scrape off the carbon deposit from the crown of the piston.
2. Scrape off the carbon deposit in the cylinder's combustion chamber.
3. Scrape off the carbon deposit in the cylinder's exhaust port.

NOTE!
Scrape carefully with a tool that is not too sharp so that the soft aluminium parts are not damaged.

4. Wash all parts.
5. Inspect all the parts for wear or damage.
6. Check the manifold with regard to crack formation, whether leakage has occurred, etc. Refer to the section “Analysis and actions”.

Check the piston and cylinder for signs of seizing damage and wear.

Refer to the section “Analysis and actions”.

Check the piston rings for signs of wear or breakage.

Refer to the section “Analysis and actions”.

Check the gudgeon pin.

– If it is blued it should be replaced.

– If it runs too easily in the piston then the piston and gudgeon pin should be replaced.

Check the needle bearing. If it is miscoloured it should be replaced.

Always replace the circlips on the gudgeon pin.

Assembling

Models 250, 265

Lubricate the gudgeon pin's needle bearing with a few drops of engine oil and fit the piston.

Assembling

Models 250, 265

Lubricate the gudgeon pin's needle bearing with a few drops of engine oil.

Point the arrow on top of the piston towards the exhaust port.

Press in the gudgeon pin and fit the circlips.

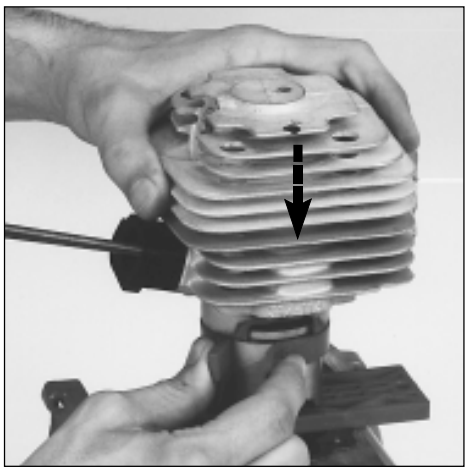
NOTE!
Place a cloth in the crankcase opening to prevent the circlips from falling into the crankcase if they should fly off.
Check that the circlips are sitting in the grooves correctly by turning the circlip using a pair of pliers.

Check that the piston and cylinder have the right classification to fit together.

There is a classification letter punched on top of the piston so that it can be paired with the right cylinder:

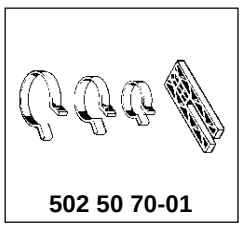
A piston punched with the same letter or a previous letter in the alphabet will fit the cylinder.

A piston stamped AB fits a cylinder stamped B.



Fit the manifold on the cylinder.

Use a new gasket and fit the cylinder.



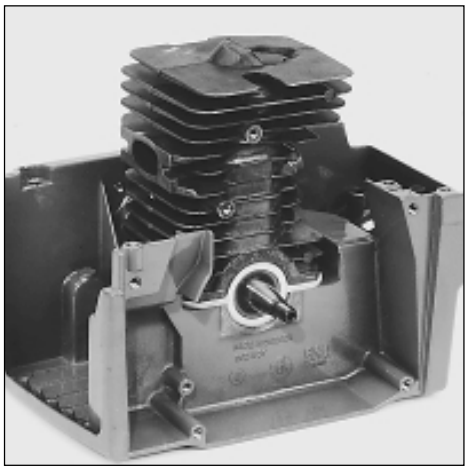
502 50 70-01

Place a new cylinder bottom gasket on the crankcase.

Fit the manifold on the cylinder. Make sure the gaskets are facing the right way so that the pulse channels to the carburettor are not blocked.

Lubricate the piston with a few drops of engine oil and fit the cylinder using assembly kit 502 50 70-01.

Tighten the cylinder base bolts.



Dismantling

Models 240/245

Dismantle all parts surrounding the cylinder.

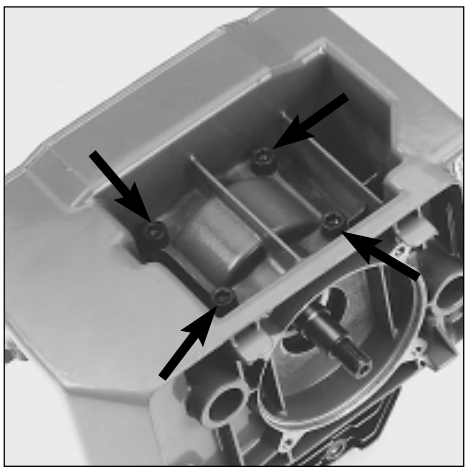
Dismantling

Models 240/245

Dismantle the following components:

Cylinder cover, spark plug, starter, air filter, carburettor, heat guard, inlet manifold, muffler, heat shield, ignition module, flywheel.

See respective sections in the Manual.



Remove the cylinder bolts.

Lift off the cylinder and dismantle the piston.

Remove the four bolts at the bottom of the crankcase.

Lift off the cylinder.

Dismantle the circlips on the gudgeon pin. (See models 250, 265).

Remove the piston. (See models 250, 265).

Cleaning, inspection

Models 240/245

Clean and inspect the cylinder and piston and associated parts.

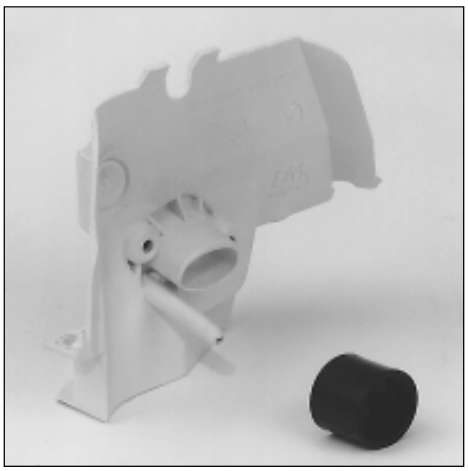
Cleaning, inspection

Models 240/245

Clean and inspect the cylinder, piston, piston ring, gudgeon pin and needle bearing as described for models 250, 265.

Also see section “Analysis and actions”.

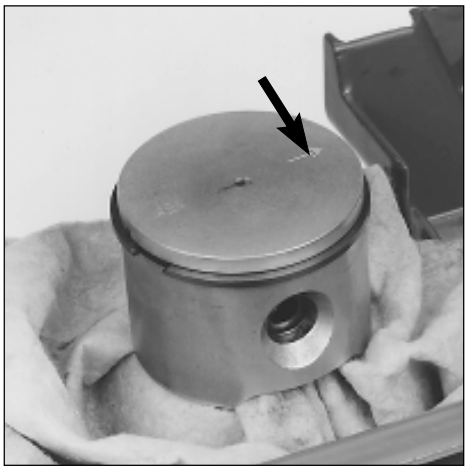
NOTE!
Make sure when cleaning the cylinder that the plastic sleeve by the pulse channel is not lost.



Check the inlet manifold and the heat guard.

Check the inlet manifold and the heat guard for crack formation in the material and on the threads.

Replace damaged parts if necessary.



Assembling

Models 240/245

Fit the piston.

Assembling

Models 240/245

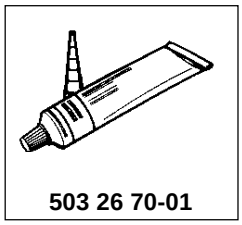
Lubricate the gudgeon pin's needle bearing with a few drops of engine oil.

Point the arrow on top of the piston towards the exhaust port.

Press in the gudgeon pin and fit the circlips.

NOTE!
Place a cloth over the big-end bearing.
Check that the circlips are sitting in the grooves correctly by turning the circlip using a pair of pliers.

Cleaning the contact face and the bearing seat and apply a string of sealant.

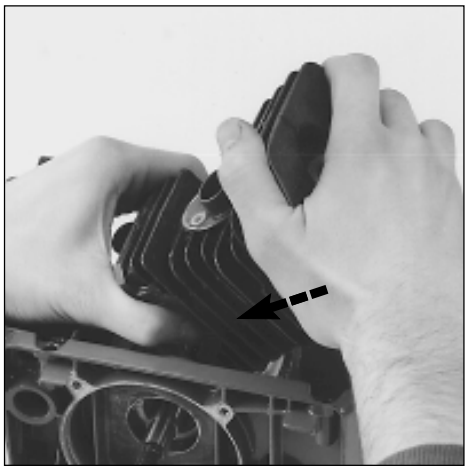


503 26 70-01

Clean the contact face on the bottom of the cylinder and bearing seat so that there are no signs of grease.

Apply a thin string (1–1.5 mm) of sealant no. 503 26 70-01 on the contact face.

NOTE!
Only this type of sealant must be used.



Fit the cylinder.

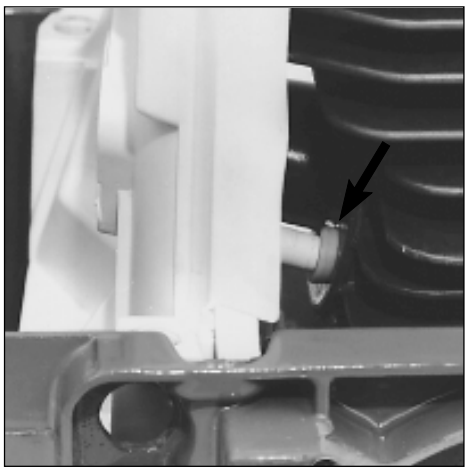
Lubricate the piston, piston ring and bearing with engine oil.

Guide the cylinder over the piston and carefully press it down towards the crankcase.

Tip!

Move the cylinder gently from side-to-side at the same time as you press it down.

NOTE!
Do not turn the cylinder. The piston rings can break.



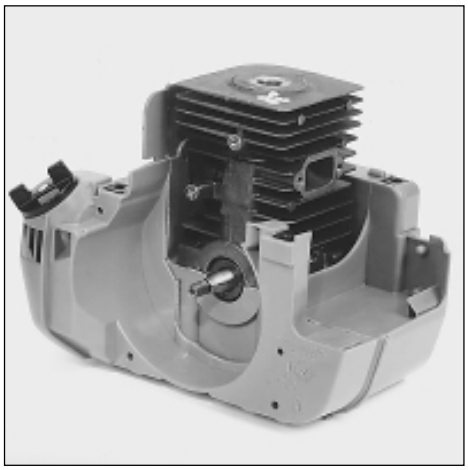
Tighten the cylinder bolts.

Tighten the cylinder bolts crosswise to a torque of 11 Nm.

Fit the heat guard on the cylinder.

Check that the inlet manifold and pulse manifold are positioned correctly and do not leak.

NOTE!
The cylinder bolts should be retightened.
Run the engine warm for 2–3 min and let it cool.
Retighten the cylinder bolts crosswise to a tightening torque of 11 Nm.



Dismantling

Models 225/232/235/240RBD

Dismantle all the parts surrounding the cylinder.

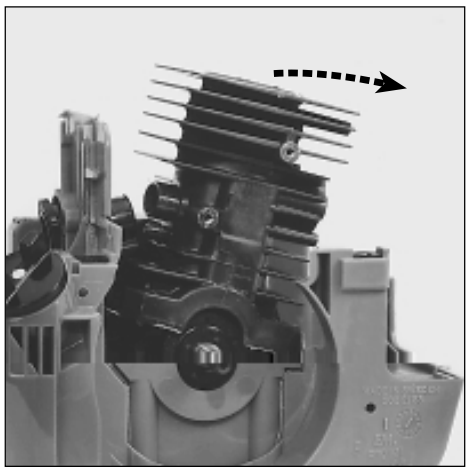
Dismantling

Models 225/232/235/240RBD

Dismantle the following parts:

Cylinder cover, spark plug, starter, air filter, carburettor, ignition module, muffler, heat guard, flywheel.

See respective sections in the Manual.

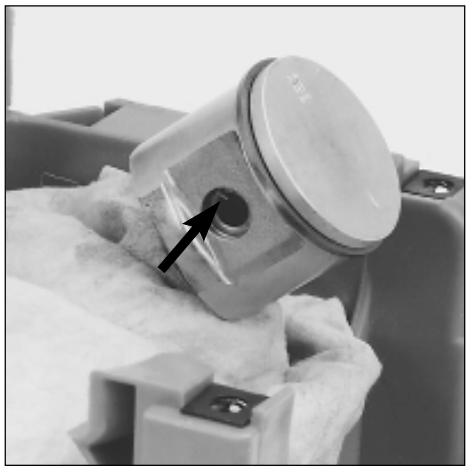


Dismantle the cylinder.

Remove the four bolts at the bottom of the cylinder.

Pull the cylinder forwards so the inlet manifold releases from the connection on the cylinder.

Lift off the cylinder and at the same time press down the crankshaft in its position inside the crankcase so that it does not follow the cylinder.



Place a cloth over the crankshaft and dismantle the piston.

Place a cloth over the crankshaft.

Dismantle the circlips on the gudgeon pin. (See models 250, 265).

Dismantle the piston. (See models 250, 265).

Cleaning, inspection

Models 225/232/235/240RBD

Clean and inspect the cylinder and piston and associated parts.

Cleaning, inspection

Models 225/232/235/240RBD

Clean and inspect the cylinder, piston, piston ring, gudgeon pin and needle bearing as described for models 250, 265.

Also see section “Analysis and actions”.

Carefully remove old gasket residue from the contact face at bottom of the cylinder!

Check the inlet manifold.

Check the inlet manifold for crack formation and damage to the contact faces to the carburettor and cylinder.

NOTE!
Pay attention to the small plastic ring on the carburettor connection so that it is not lost during cleaning.

Assembling

Models 225/232/235/240RBD

Fit the piston.

Assembling

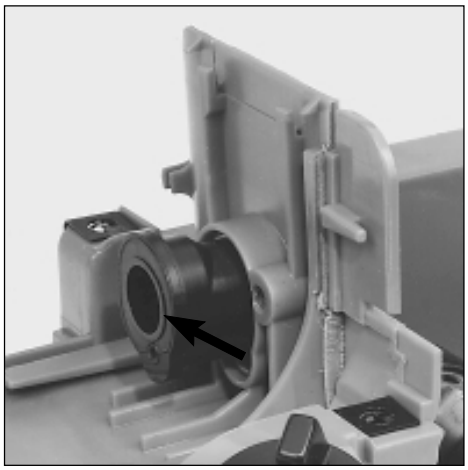
Models 225/232/235/240RBD

Lubricate the gudgeon pin's needle bearing with a few drops of engine oil.

Point the arrow on top of the piston towards the exhaust port.

Press in the gudgeon pin and fit the circlips.

NOTE!
Place a cloth over the big-end bearing.
Check that the circlips are sitting in the grooves correctly by turning the circlip using a pair of pliers.

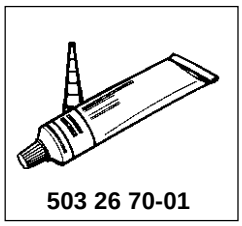


Fit the inlet manifold.

Lubricate the outside of the inlet manifold with a few drops of engine oil and fit it to the insulation wall on the crankcase.

NOTE!
Do not forget to position the small plastic ring in the inlet manifold.

Check that the contact face at the bottom of the cylinder is clean and free of grease. Apply a narrow string of sealant.

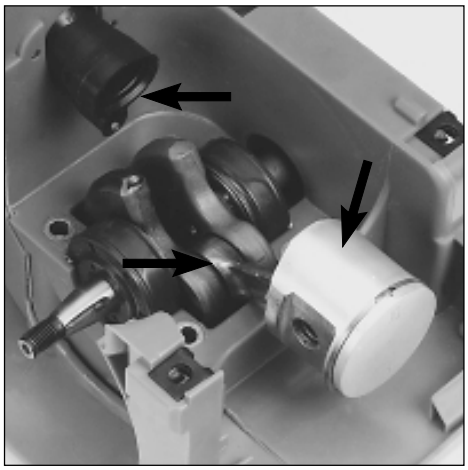


503 26 70-01

Check that the contact faces on the crankcase and at the bottom of the cylinder are clean and free of grease and sealant.

Apply a thin string (1–1.5 mm) of sealant no. 503 26 70-01 on the contact face.

NOTE!
Only this type of sealant must be used.

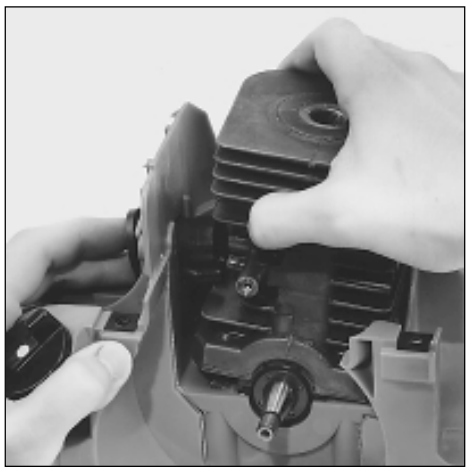


Lubricate the inlet manifold's connection on the cylinder with a few drops of engine oil.

Lubricate the piston, piston ring and bearing with engine oil.

Lubricate the inlet manifold's connection on the cylinder with a few drops of engine oil.

Lubricate the piston, piston ring and bearing with engine oil.



Fit the cylinder.

Check the connection of the inlet manifold on the cylinder.

Guide the cylinder over the piston and carefully press it down towards the crankcase.

Tip!

Move the cylinder gently from side-to-side at the same time as you press it down.

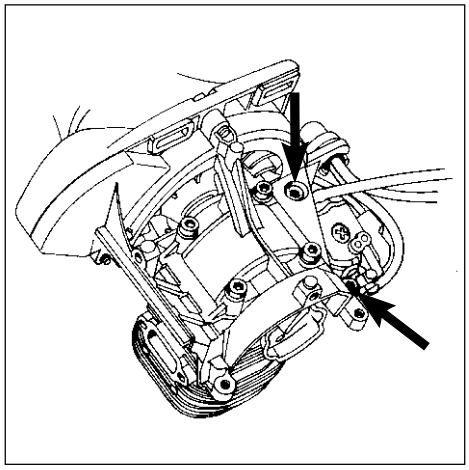
NOTE!
Do not turn the cylinder. The piston ring can break.
Make sure the inlet manifold is connected correctly on the cylinder.

Tighten the cylinder bolts crosswise to a tightening torque of 11 Nm.

Retighten the bolts.

Tighten the cylinder bolts crosswise to a tightening torque of 11 Nm.

NOTE!
The cylinder bolts should be retightened.
Run the engine warm for 2–3 min and let it cool.
Retighten the cylinder bolts crosswise to a tightening torque of 11 Nm.



Dismantling

Models 322, 325

Dismantle all parts around the cylinder incl. the distance piece with attached carburettor.

Dismantling

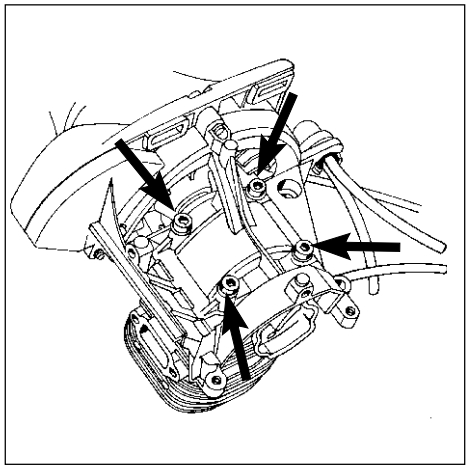
Models 322, 325

Dismantle the following parts:

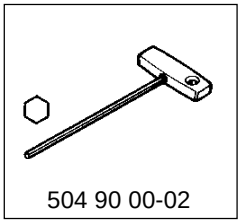
Cylinder cover, muffler grille, muffler with heat guard plate, starter and spark plug. Move the fuel tank.

Now remove the 2 screws holding the distance piece against the crankcase.

Remove the distance piece with the attached carburettor.



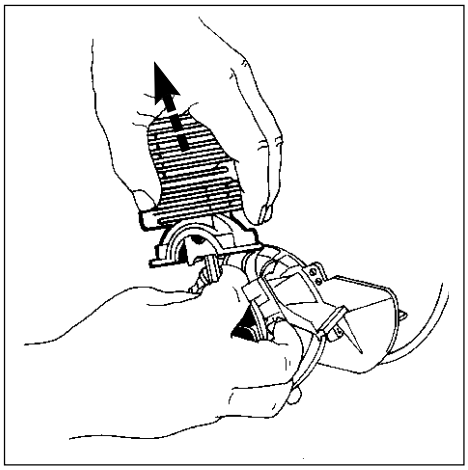
Remove the bolts holding the cylinder.



504 90 00-02

Remove the 4 bolts holding the cylinder against the crankcase.

Use tool no. 504 90 00-02.

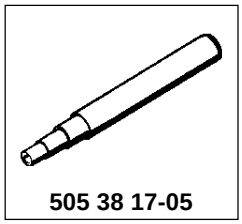


Lift off the cylinder and remove the piston from the connecting rod.

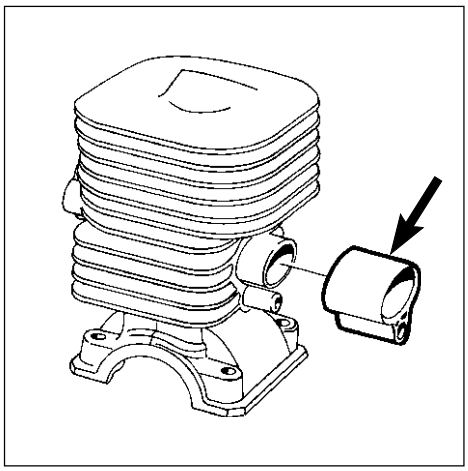
Pull the cylinder straight up without turning it. There is a risk that the piston ring may break.

A sealant has been used instead of a gasket on the base of the cylinder.

Dismantle the piston from the connecting rod.



505 38 17-05



Cleaning, inspection

Models 322, 325

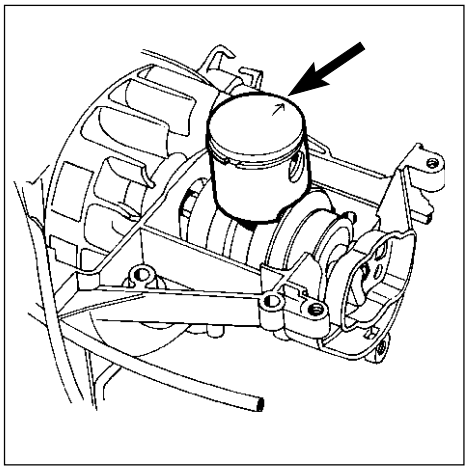
Clean and inspect the piston and cylinder. Check the rubber induction manifold with regard to crack formation and other damage.

Cleaning, inspection

Models 322, 325

Before the piston and cylinder are assembled the parts must be cleaned and inspected in the same way as described for models 250, 265. Also see section “Analysis and measures”.

Check that the rubber induction manifold between the cylinder and distance piece is not cracked nor has other damage that can cause leakage.



Assembling

Models 322, 325

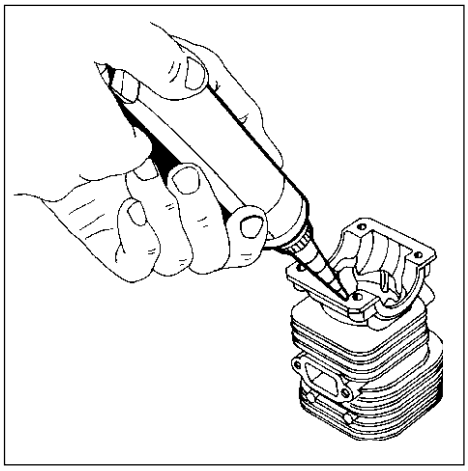
Clean the sealant from the crankcase and assemble the piston on the connecting rod.

Assembling

Models 322, 325

Clean any sealant and grease from the crankcase.

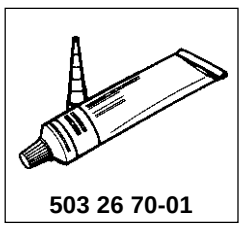
Fit the piston on the connecting rod so that the arrow on the piston points towards the exhaust port.



Clean the contact surface at the base of the cylinder and apply a narrow bead of sealant no. 503 26 70-01 on the contact surface.

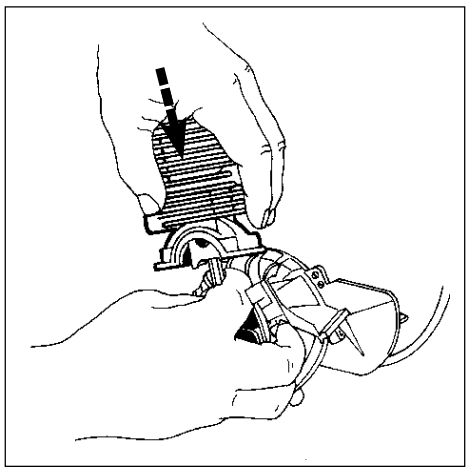
Clean any sealant and grease from the contact surface on the base of the cylinder.

Apply a narrow bead (1–1.5 mm) of sealant no. 503 26 70-01 on the contact surface.



503 26 70-01

NOTE!
Also apply sealant to the bearing seatings in the crankcase and cylinder if the old bearings are to be refitted.
No sealant is required if new bearings are fitted.



Carefully slide the cylinder over the piston and tighten the 4 bolts crosswise.

Lubricate the piston using a few drops of oil and carefully slide the cylinder over the piston.

NOTE!
Do not turn the cylinder, as the piston ring can easily be broken.

Tighten the 4 bolts crosswise.

Assemble the remaining parts in the reverse order as set out for dismantling.

Dismantling

Model 122

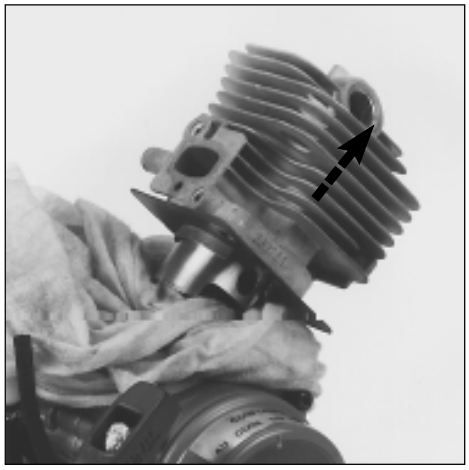
Dismantle all the parts surrounding the cylinder. Remove the two cylinder bolts.

Dismantling

Model 122

Dismantle the spark plug, cylinder cover, muffler, air filter, carburettor, fan cover, ignition module and carburettor manifold.

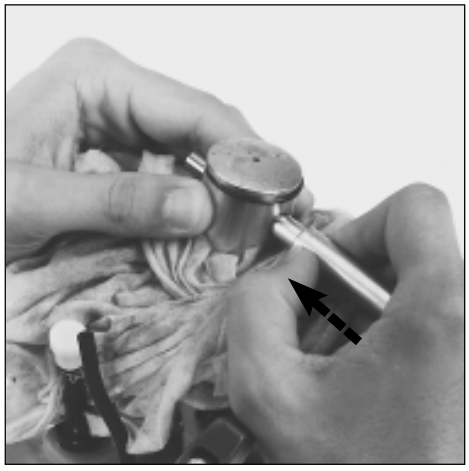
Remove the two bolts holding the cylinder on the crankcase.



Lift off the cylinder.

Lift up the cylinder a little and place a cloth in the crankcase opening to prevent dirt from falling into the crankcase.

Lift off the cylinder from the piston.

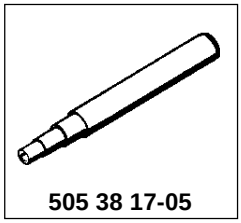


Dismantle the piston.

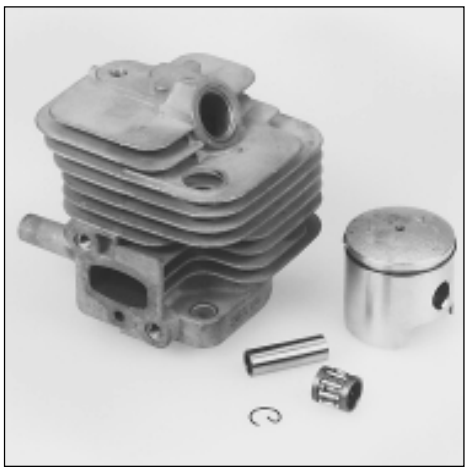
Use a pair of pliers to remove the gudgeon pin's circlip as described for models 250, 265.

Press out the gudgeon pin using the punch no. 505 38 17-05.

If the gudgeon pin is difficult to remove the piston can be carefully heated.



505 38 17-05



Cleaning, inspection

Model 122

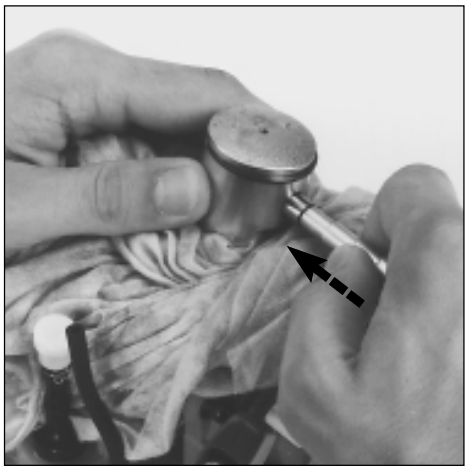
Clean and inspect the cylinder and piston and associated parts.

Cleaning, inspection

Model 122

Clean and inspect the cylinder, piston, piston ring, gudgeon pin and needle bearing as described for models 250, 265.

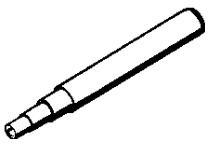
Also see section “Analysis and actions”.



Assembling

Model 122

Fit the piston on the connecting rod.



505 38 17-05

Assembling

Model 122

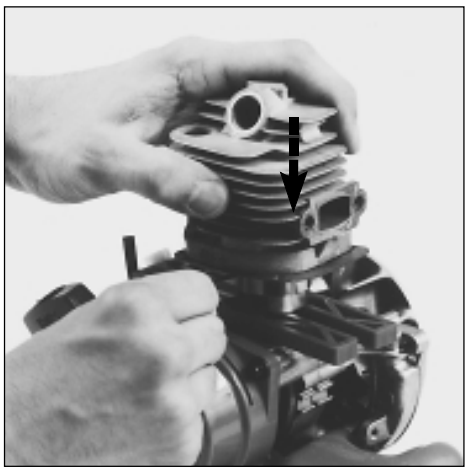
Lubricate the gudgeon pin's needle bearing with a few drops of engine oil.

Point the arrow on top of the piston towards the exhaust port.

Use the punch no. 505 38 17-05 to push in the gudgeon pin.

Press in the gudgeon pin and fit the circlips.

NOTE!
Place a cloth over the big-end bearing. Check that the circlips are sitting in the grooves correctly by turning the circlip using a pair of pliers.



Use a new bottom gasket on the cylinder and fit the cylinder.

531 00 48-65

502 50 70-01

Fix a new bottom gasket using a little grease on to the cylinder and lubricate the piston with a few drops of oil.

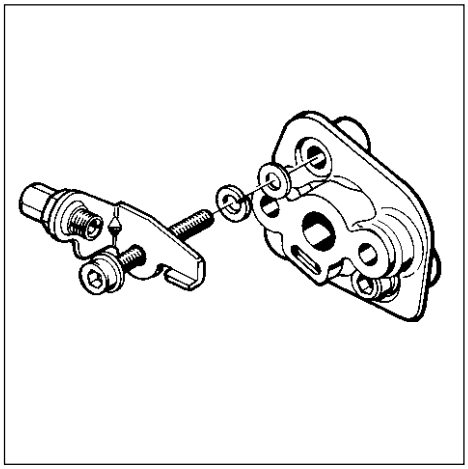
Place the support plate from the assembly kit no. 502 50 70-01 under the piston.

Press together the piston rings using tool 531 00 48-65.

Carefully slide the cylinder down over the piston. Check that the cylinder is positioned correctly.

NOTE!
Do not turn the cylinder. The piston ring can break.

Tighten the bolts holding the cylinder.

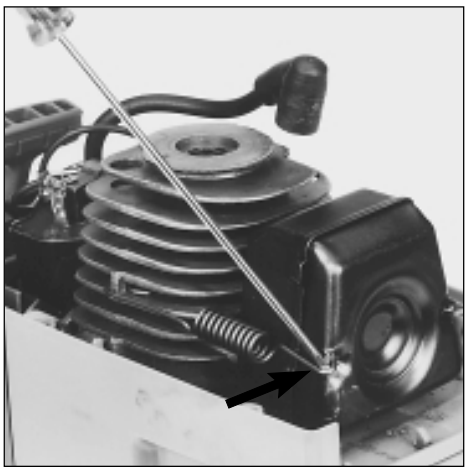


Fit the manifold on the cylinder and the carburettor and the other parts in the reverse order set out for dismantling.

Place the combined gasket and heat guard between the cylinder and manifold. Do not forget to fit the throttle cable's tensioning unit on the upper, left-hand screw.

NOTE!
The spring washer and flat washer shall sit between the sheet angle and the manifold.

Fit the carburettor and the other components in the reverse order set out for dismantling.



Dismantling
Model 32

Dismantle the cylinder cover, spark plug and muffler.

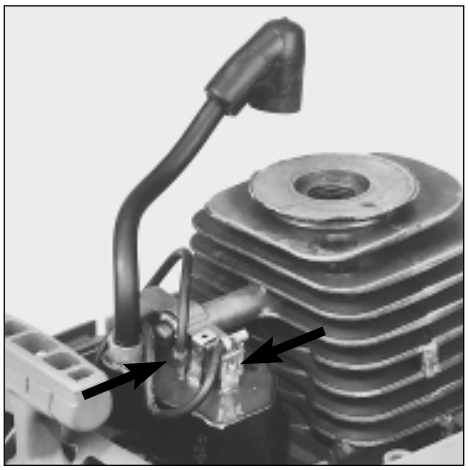
Dismantling
Model 32

Dismantle the cylinder cover and spark plug.

Remove the muffler.

Use a narrow blade screwdriver and pry out the springs.

WARNING!
The springs are heavily tensioned and can fly out when loosened. Wear protective glasses and protect your hands.

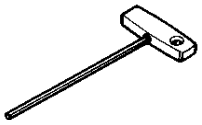


Remove both the cables from the ignition module and dismantle the cylinder.

Remove both the cables from the ignition module and undo the cylinder bolts.

Now lift the cylinder straight up.

Place a cloth in the crankcase opening to prevent dirt from falling into the crankcase.



502 50 57-01

Dismantle the piston.

Dismantle the piston as described for models 250, 265.

NOTE!
Exercise care when the gudgeon pin is pressed out. There is a risk that the pin's needle bearing can fall out and be lost.

Cleaning, inspection
Model 32

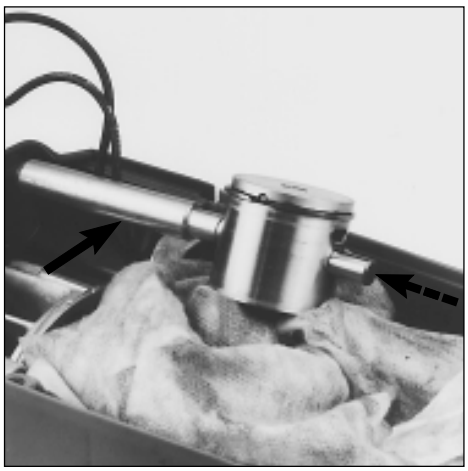
Clean and inspect the cylinder and piston and associated parts.

Cleaning, inspection
Model 32

Clean and inspect the cylinder, piston, piston ring, gudgeon pin and needle bearing as described for models 250, 265.

Also see section “Analysis and actions”.

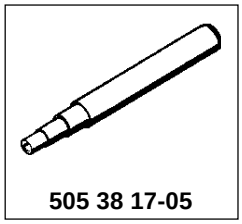
NOTE!
The gudgeon pin's bearing is pressed into the connecting rod. These parts should be replaced at the same time if any of them are damaged.



Assembling

Model 32

Lubricate the gudgeon pin's needle bearing with a little grease.



505 38 17-05

Assembling

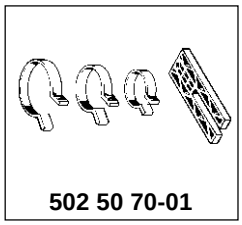
Model 32

Lubricate the gudgeon pin's needle bearing with a little grease to keep the needles in place.

Align the piston and gudgeon pin using punch no. 505 38 17-05. Carefully press in the gudgeon pin.

Fit the circlips and check that they sit correctly in the groove by turning with a pair of pliers.

Use a new bottom gasket on the cylinder and fit the cylinder.



502 50 70-01

Place a new bottom gasket on the crankcase.

Lubricate the piston and piston ring with a few drops of oil.

Fit the cylinder using assembly kit no. 502 50 70-01.

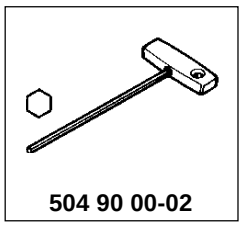
Use Loctite on the bolts and tighten.

Fit the remaining parts in the reverse order set out for dismantling.

Dismantling

Model Mondo

Make a hole in the decal. Loosen the screw and remove the cover.



504 90 00-02

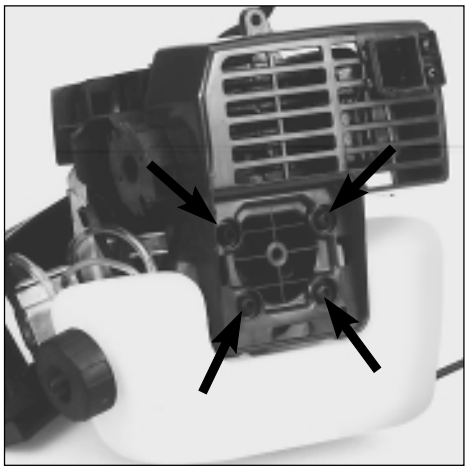
Dismantling

Model Mondo

Dismantle the engine from the shaft unit and then remove the following parts:

Clutch, starter cover, spark plug, air filter, carburettor.

Make a hole in the decal and loosen the screw that holds the cover.

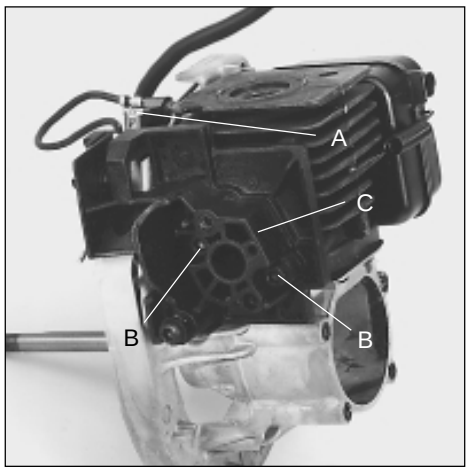


Dismantle the cylinder cover and fuel tank.

Remove the four bolts that hold the cylinder cover.

Pry off the cover using a screwdriver placed in between the fuel tank and cover.

Lift off the fuel tank.

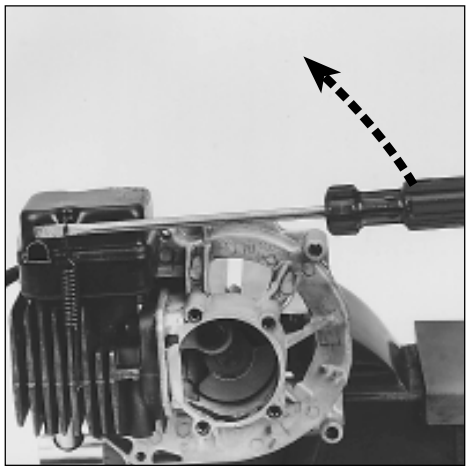


Dismantle the short circuit cable and manifold.

Dismantle the short circuit cable from the ignition module (A).

Remove the bolts (B) holding the manifold (C).

Lift off the manifold.

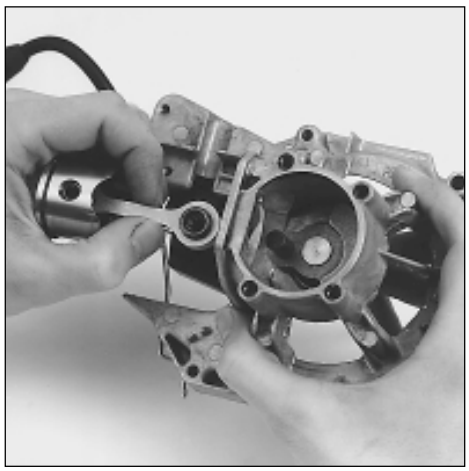


Dismantle the muffler.

Dismantle the muffler.

Use, a screwdriver, for example, as a lever to stretch out one of the springs as illustrated.

Lift off the muffler.

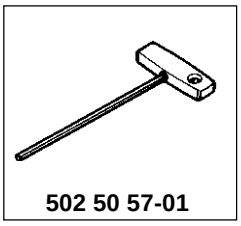


Dismantle the cylinder and connecting rod and the piston.

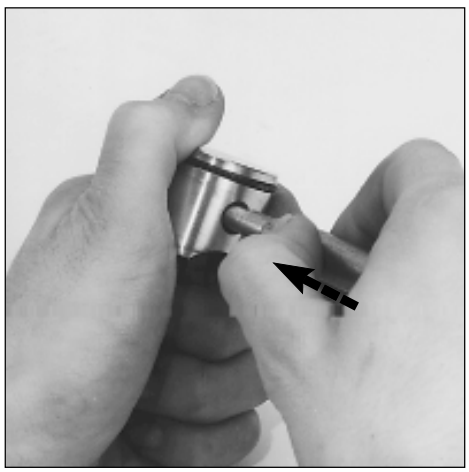
Remove the two bolts holding the cylinder using an allen key with a 3/16" key handle (502 50 57-01).

Lift off the cylinder.

Now lift off the piston and connecting rod in one piece from the crankshaft.

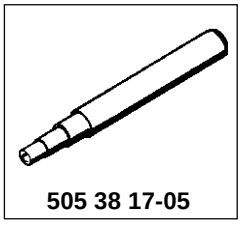


502 50 57-01



Dismantle the piston from the connecting rod.

Remove the two circlips on the gudgeon pin and press the pin out of the piston using the punch no. 505 38 17-05.



505 38 17-05

Cleaning, inspection

Model Mondo

Clean and inspect the different cylinder and piston parts.

Cleaning, inspection

Model Mondo

Clean and inspect the cylinder, piston, piston ring, gudgeon pin and needle bearing as described for models 250, 265.

Also see section “Analysis and actions”.

Scrape off any gasket residue from the cylinder and crankcase as well as from the manifold face on the carburettor side.

Replace the connecting rod complete with bearings if any of the parts have faults.

The needle bearings at both ends of the connecting rod are pressed into place. If they are heavily blued or show signs of breakage or wear the connecting rod complete with bearings should be replaced.

Assembling

Model Mondo

Fit the piston on the connecting rod.

Assembling

Model Mondo

Lubricate the connecting rod's bearings with a few drops of engine oil.

Fit the piston on the connecting rod (end with the smallest bearing).

Fit one of the circlips for the gudgeon pin in the piston.

Align the piston on the connecting bolt and press in the gudgeon pin.

Fit the other circlip.

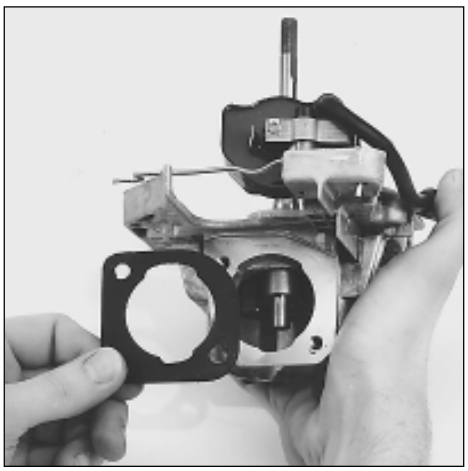
NOTE!
Check that the circlips are sitting in the grooves correctly by turning the circlip using a pair of pliers.

Slide the piston a little way into the cylinder.

Lubricate the piston and piston ring with a few drops of engine oil.

Slide the piston in so the ring just passes the chamfer.

NOTE!
The guide pin for the piston ring should face the inlet port in the cylinder.

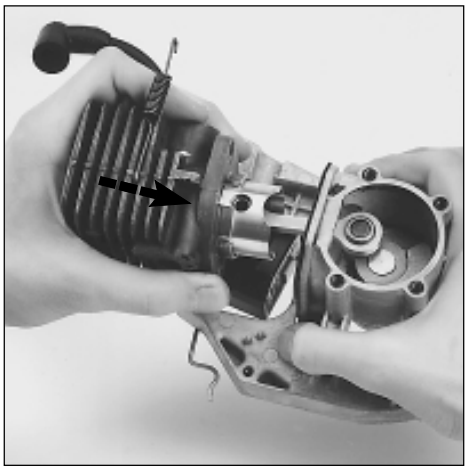


Use a new bottom gasket and make sure it is turned the right way.

Place a new gasket on the crankcase's contact face.

Attach with a little grease if necessary.

Check that the cut-out in the gasket corresponds with the cut-out in the crankcase.



Place the connecting rod over the crank pin and slide down the cylinder.

Tighten the cylinder.

Place the connecting rod over the crank pin and slide down the cylinder over the piston towards the crankcase contact face.

Tighten the cylinder with the two bolts.

Use Loctite on the bolts.

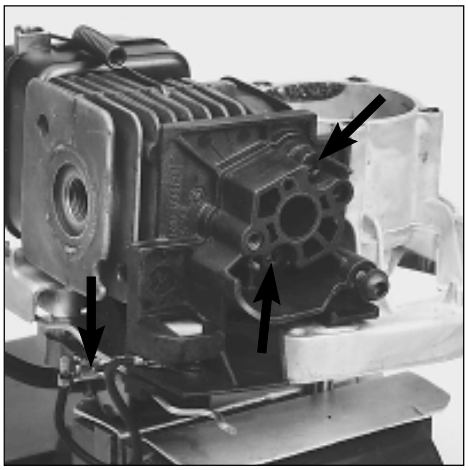
Fit the muffler.

Fit the muffler.

First hook on the spring closest to the ignition module.

Move the muffler down towards the cylinder so the guides pins enter the corresponding cut-outs in the muffler.

Finally hook on the last spring using a screwdriver in the same way as described under dismantling.



Fit the manifold on the cylinder.

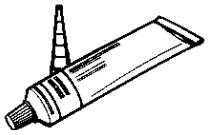
Connect the short circuit cable.

Fit the manifold on the cylinder. Use a new gasket.

Use Loctite on the bolts.

Connect the short circuit cable on the ignition module.

Fit the combined crankcase half/cylinder cover.



503 26 70-01

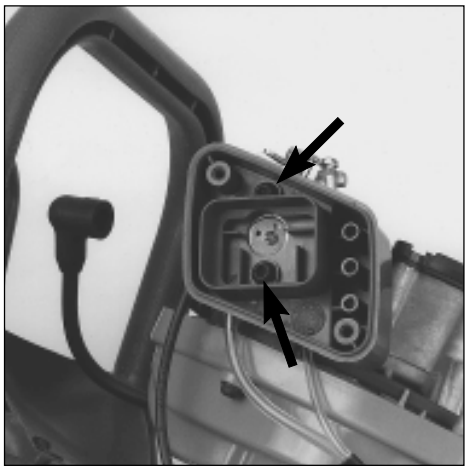
Apply a narrow string (1–1.5 mm) of sealant no. 503 26 70-01 of crankcase.

Position a new gasket.

Also apply a narrow string of sealant on the contact face on the combined crankcase half/cylinder cover and put it in position.

Tighten the four bolts.

Assemble the remaining parts in the reverse order set out for dismantling.



Dismantling

Model 18H

Dismantle the spark plug, cylinder cover and carburettor.

Dismantling

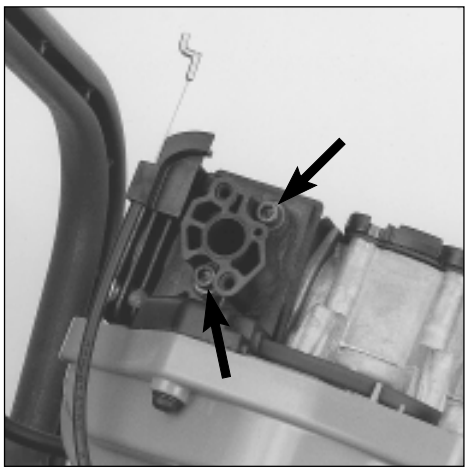
Model 18H

Dismantle the spark plug and cylinder cover.

Remove the air filter cover and air filter.

Loosen the two screws holding the air filter holder and carburettor.

Now lift off the carburettor.



Dismantle the carburettor's distance piece from the cylinder.

Remove both screws holding the carburettor's distance piece on the cylinder.

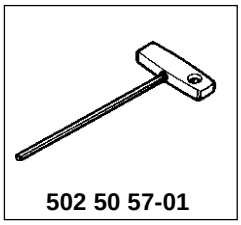
Carefully pry off the distance piece using a screwdriver.

Dismantle one of the springs holding the muffler.

Pry off one of the springs holding the muffler by using a small screwdriver.

Move the muffler away, but let it remain suspended by the rear spring.

Dismantle the cylinder and connecting rod and piston.



502 50 57-01

Remove the two screws holding the cylinder using an allen key (3/16" key grip) no 502 50 57-01.

Lift off the cylinder with the muffler.

Remove the cover on the crankcase and lift off the piston and connecting rod.

Cleaning, inspection and assembly

Model 18H

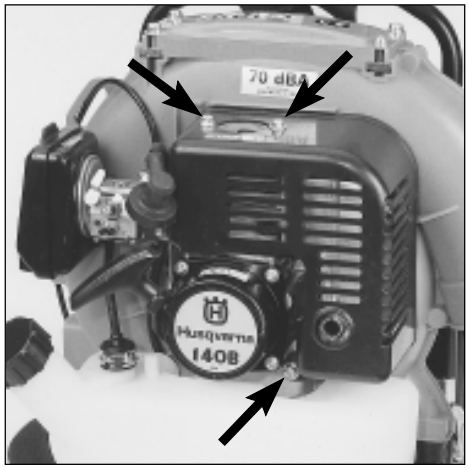
Performed in the same way as described for model Mondo.

Cleaning, inspection and assembly

Model 18H

Performed in the same way as described for model Mondo.

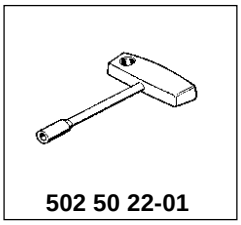
NOTE!
Hook the muffler in the rear spring before the cylinder is fitted. This facilitates assembly.



Dismantling

Model 140B/141B

Dismantle the cylinder cover.



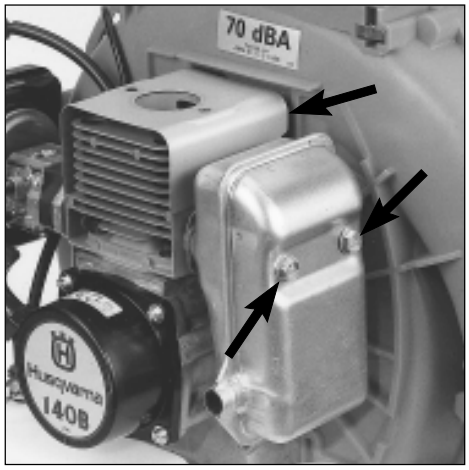
502 50 22-01

Dismantling

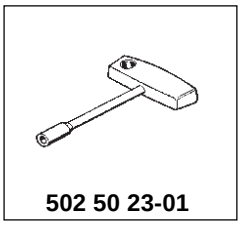
Model 140B/141B

Remove the spark plug.

Unscrew the 3 bolts and lift off the cover.



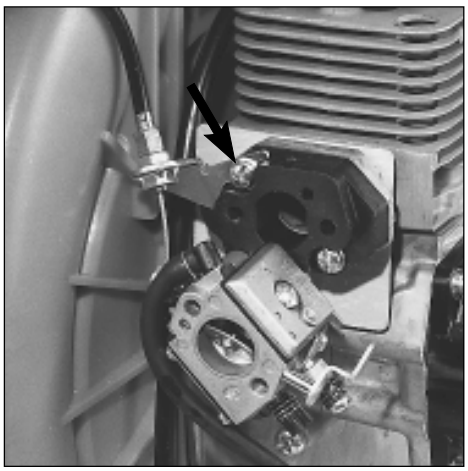
Remove the cooling air plate and dismantle the muffler.



502 50 23-01

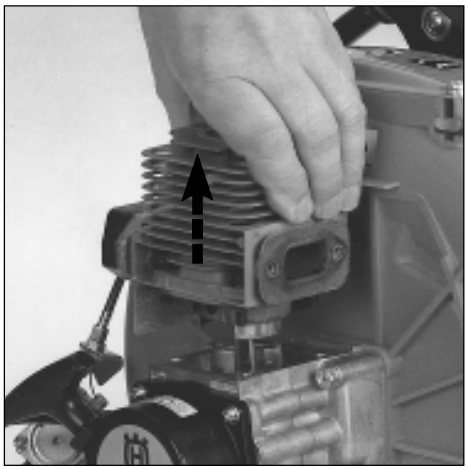
Lift off the cooling air plate above the cylinder.

Dismantle the muffler by removing the 2 screws.



Dismantle the carburettor and throttle cable holder from the distance piece.

Dismantle the air filter, throttle cable holder and carburettor according to the instructions in the chapter “Fuel system”.

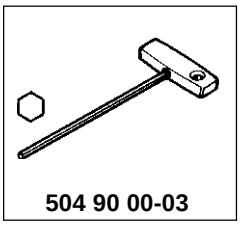


Loosen the screws and lift off the cylinder.

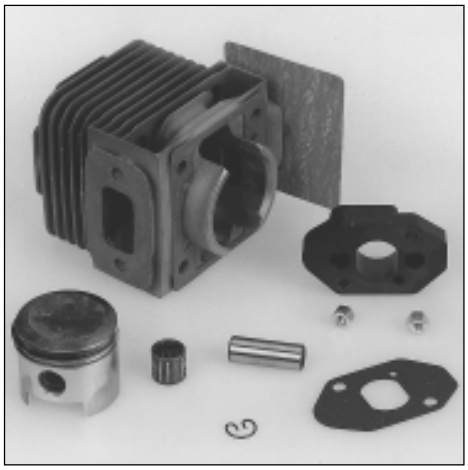
Loosen the 4 bolts holding the cylinder against the crankcase.

Lift off the cylinder straight upwards so that the piston rings are not broken.

Dismantle the piston in the same way as described for models 250, 265.



504 90 00-03



Cleaning and inspection

Model 140B/141B

Clean and inspect the different cylinder and piston parts.

Cleaning and inspection

Model 140B/141B

Clean and inspect the cylinder, piston, piston rings and gudgeon pin in the same way as described for models 250, 265.

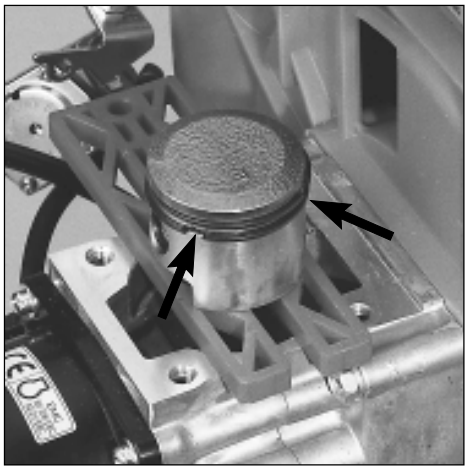
Also see section “Analysis and measures”.

Scrape off any gasket residue from the base of the cylinder and crankcase as well as the contact surfaces for the distance piece on the carburettor side.

NOTE!

If the piston is to be dismantled from the connecting rod, the engine must first be dismantled from the fan so that one of gudgeon pin’s circlips can be removed.

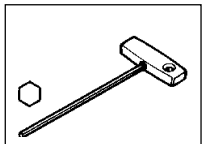
See chapter “Ignition system”.



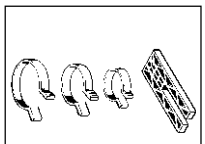
Assembling

Models 140B/141B

Assembly takes place in the same way as described for model 122.



504 90 00-03



502 50 70-01

Assembling

Models 140B/141B

Assembly takes place in the same way as described for model 122.

NOTE!
If the piston has been dismantled from the connecting rod it is assembled so that the locking pins come towards the exhaust port.

Use assembly kit no. 502 50 70-01 and tool 502 50 70-01 when the cylinder is fitted on the crankcase.

Assemble remaining parts in the reverse order as set out for dismantling.

Analysis and actions

The two pictures to the left show what a new piston looks like, one on the inlet side the other on the exhaust side. Note that the machining marks from manufacturing are clearly visible.

Use these pictures as a reference when determining damage and wear.

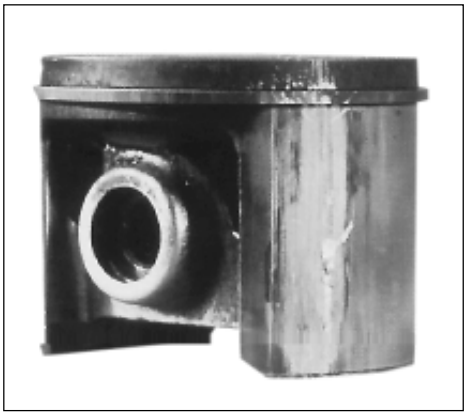
Experience tells us that piston or cylinder failures due to manufacturing errors are extremely rare.

The reason is usually due to other factors, which is evident from the following.

Note the reasons for the breakdown, repair the damage and take the actions to prevent the same thing happening again.

New piston, inlet side.

New piston, exhaust side.



Small and medium size scores primarily in front of the exhaust port.

Insufficient lubrication

The piston has small to medium size score marks usually in front of the exhaust port. In extreme case heat development can be so great that material from the piston smears along the piston skirt and even in the cylinder bore.

Generally the piston ring is undamaged and moves freely in the ring groove.

There can also be scores on the inlet side of the piston.

Reason:	Action:
● Incorrect carburettor setting. Recommended max. speed exceeded.	Check and change the carburettor setting.
● Incorrect oil mixture in the fuel.	Change the fuel.
● Fuel has too low octane value.	Change to a higher octane petrol.

Medium to deep scores along the entire piston skirt on the exhaust side.

Heavy scoring along the entire piston skirt on the exhaust side.

Medium to deep scores on the exhaust side. The piston ring is stuck in the groove. Black miscolouration under the piston ring due to blow-by.

The piston ring starts to stick or is completely stuck in its groove and has therefore not been able to seal against the cylinder wall, which has resulted in further, intensive temperature increases on the piston.

Seizure scores along the entire piston skirt on the inlet and exhaust sides.

Cause:	Action:
● Incorrect oil mixture in the fuel.	Change the fuel.
● Fuel has too low octane value.	Change to a higher octane petrol.
● Air leaks.	Replace damaged parts.
Cracked fuel pipe.	
Leaking inlet gaskets.	
Cracked manifold or inlet manifold.	
● Air leakage in engine body.	Replace leaking gaskets and shaft seals.
Leaking crankshaft seals.	
Leaking cylinder and crankcase gaskets.	
● Bad maintenance	Clean the cooling fins and air intake.
Dirty cooling fins on the cylinder.	
Blocked air intake on the starter.	
Blocked spark arrest screen on the muffler.	Clean or replace the spark arrest screen.

For the best results we recommend Husqvarna two-stroke oil, which is specially developed for air-cooled two-stroke engines.

Mixing ratio: 1:50 (2%).

If Husqvarna two-stroke oil is not available another good quality two-stroke oil can be used.

Mixing ratio: 1:33 (3%) or 1:25 (4%).

Piston scoring caused by heavy carbon deposits

Too heavy carbon depositing can cause damage similar to that caused by insufficient lubrication. However, the piston skirt has a darker colour caused by the hot combustion gases that are blown past the piston.

This type of piston damage starts at the exhaust port where carbon deposits can become loose and trapped between the piston and cylinder wall.

Inlet side. The piston ring is stuck in its groove. Black discolouration under the piston ring due to blow-by.

Typical for this type of piston damage is brown or black discolouration of the piston skirt.

Cause:

- Wrong type of two-stroke oil or petrol.
- Incorrect oil mixture in the fuel.
- Incorrect carburettor setting.

Action:

Change the fuel.

Change to a fuel with the right oil mixture.

Correct the carburettor setting.

Exhaust side damaged by a broken piston ring. The piston ring parts damage the top section and cause score marks.

Piston damage caused by a too high engine speed.

Typical damage associated with a too high engine speed is broken piston ring, broken circlips on the gudgeon pin, faulty bearings or that the guide pin for the piston ring has become loose.

Piston ring breakage

A too “lean” carburettor setting results in a too high speed and a high piston temperature. If the piston temperature rises above the normal working temperature the piston ring can seize in its groove, consequently it will not sit deep enough in its groove. The edges of the piston ring can then hit the top edge of the exhaust port and be smashed and also cause piston damage.

A too high engine speed can also cause rapid wear to the piston ring and play in the piston ring groove primarily in front of the exhaust port. The ring is weakened by the wear and can be caught in the port causing serious piston damage.

The guide pin for the piston ring has been pushed up through the top of piston.

Piston ring guide pin vibrated loose

A too high engine speed can cause the ends of the piston ring to hammer against the guide pin when the piston ring moves in its groove. The intensive hammering can drive out the pin through the top of the piston causing serious damage also to the cylinder.

Deep, irregular grooves caused by a loose circlip. Shown here on the piston's inlet side.

Damage caused by gudgeon pin circlips

A too high engine speed can cause the gudgeon pin circlips to vibrate. The circlips are drawn out of their groove due to the vibrations, which in turn reduces the circlips' tensioning power. The rings can then become loose and damage the piston.

Irregular grooves on the piston's inlet side caused by a broken roller retainer.

Bearing failure

A failure on the crankshaft bearing or on the connecting rod bearing is usually caused by a too high engine speed, resulting in the bearing being overloaded or over heating. This in turn can cause the bearing rollers or ball to glide instead of rotate, which can mean the roller or ball retainer breaks.

The broken debris can be trapped between the piston and cylinder wall, damaging the piston skirt.

Debris can also pass up through the cylinder's transfer channels and cause damage to the top and sides of the piston as well as the cylinder's combustion chamber.

Small score marks and a matt, grey surface on the piston's inlet side caused by fine dust particles.

Foreign objects

Everything other than clean air and pure fuel that enters the engine's inlet port causes some type of abnormal wear or damage to the cylinder and piston.

This type of increased wear shows on the piston's inlet side starting at the lower edge of the piston skirt.

The damage is caused by badly filtered air that passes through the carburettor and into the engine.

Inlet side.

Particles of dust and dirt from carbon-like deposits on the top of the piston and in the piston ring groove. The piston ring sits firmly in the groove. Piston material has been worn away.

The lower part of the piston skirt is thinner on the inlet side than on the exhaust side.

Cause:

- Faulty air filter. Small dust particles pass through the filter.
- The filter is worn out due to too much cleaning, whereby small holes have appeared in the material.
- Unsuitable filter maintenance, e.g. wrong method or wrong cleaning agent. Flock material becomes loose and holes appear.
- Air filter incorrectly fitted.
- Air filter damaged or missing.

Action:

Fit a finer grade filter.

Check the filter carefully for holes and damage after cleaning. Replace the filter if necessary.

Clean more carefully and use the right cleaning agent (e.g. tepid soapy water or Husqvarna Active Cleaning).
Change the filter.

Fit the filter correctly.

Fit a new air filter.

505 69 85-70

The piston scored and worn from the piston ring down on the inlet side.

Large, softer particles that penetrate into the engine cause damage to the piston skirt under the piston ring as the photograph shows.

Cause:

- Air filter incorrectly fitted.
- Air filter damaged or missing.

Action:

Fit the filter correctly.

Fit a new air filter.

Extensive damage to the piston's inlet side..

Larger, harder particles that enter the engine cause serious damage to the underside of the piston skirt.

Cause:

- Air filter damaged or missing.
- Parts from the carburettor or intake system have become loose and entered the engine.

Action:

Fit a new air filter.

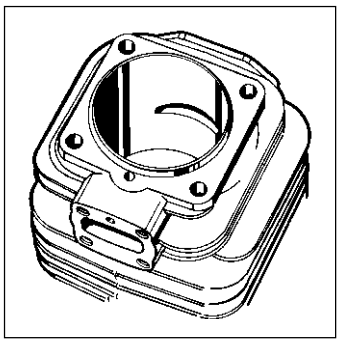
Regular service and inspection.

Service advice

Defect:	Action:
Broken cooling fins, damaged threads or sheared bolts by the exhaust port.	In bad situations – replace the cylinder. Repair the threads using Heli-Coil.
Seizure marks in the cylinder bore (especially by the exhaust port).	Polish the damaged area using a fine grade emery cloth so that the coating of aluminium disappears. With deep seizure score marks the piston and cylinder should be replaced.
Surface coating in the cylinder bore worn out (primarily at the top of the cylinder).	Replace the cylinder and piston.
The piston shows signs of seizure score marks.	Carefully polish the damaged area using a fine file of fine grade emery cloth. Before the piston is refitted the cylinder should be polished as above. With deep score marks the piston and cylinder should be replaced.
Piston ring burnt in its groove.	Carefully loosen the piston ring and clean the groove well before refitting. Carbon deposits in the groove impair the important heat transfer between the piston and cylinder. Check the wear on the piston ring by placing it in the lower part of the cylinder.

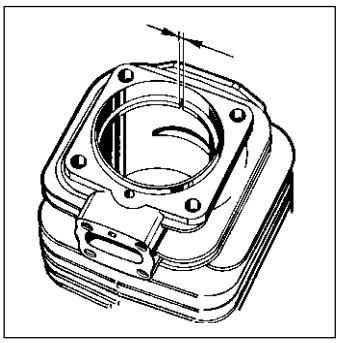
Wear tolerances

Cylinder bore



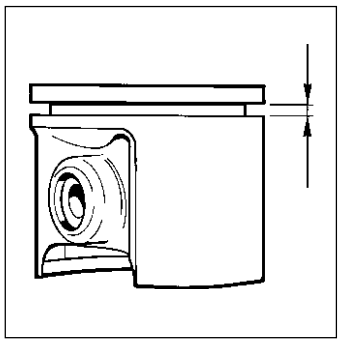
When the surface coating is worn and aluminium appears.

Piston ring gap



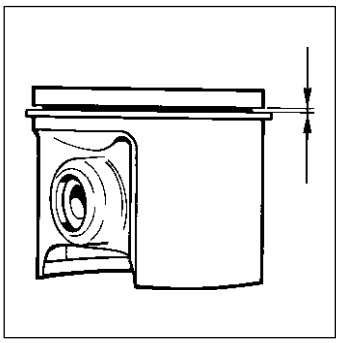
Max. 1.0 mm with the piston ring inserted in the lower part of the cylinder.

Piston ring groove



Max. height on a new piston ring + 0.10 mm.

Piston ring play



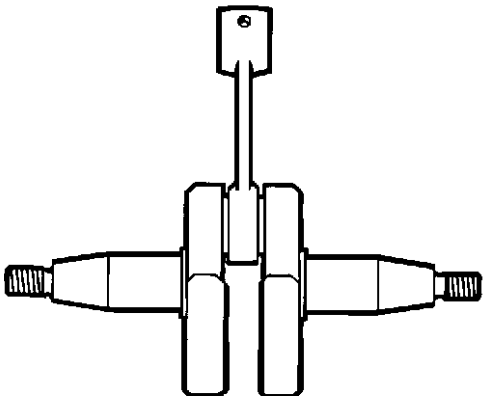
Max. 0.15 mm. Clean the groove carefully before measuring.

Technical data

Model	Displacement cm^3	Cylinder diameter mm	Stroke length mm
Mondo	24.0	34.5	26.4
122L	22.5	32.0	28.0
Mondo Max	24.0	34.5	26.4
225L/LD	25.4	34.0	28.0
232L	30.8	35.0	32.0
Mondo Mega	24.0	34.5	26.4
225R/RD	25.4	34.0	28.0
232R	30.8	35.0	32.0
322	21.7	32.0	27.0
325	24.5	34.0	27.0
235R	36.3	38.0	32.0
240R	40.2	40.0	32.0
245R	44.3	42.0	32.0
250R	48.7	44.0	32.0
245RX	44.3	42.0	32.0
250RX	48.7	44.0	32.0
252RX	50.8	45.0	32.0
265RX	65.1	48.0	36.0
240RBD	36.3	38.0	32.0
235P	36.3	38.0	32.0
250PS	48.7	44.0	32.0
225E	25.4	34.0	28.0
18H	18.0	29.5	26.4
225H60/75	25.4	34.0	28.0
140B/141B	40.2	40.0	32.0
132HBV	31.7	36.9	30.2
225BV/225HBV	25.4	34.0	28.0

Crankshaft and crankcase

7.

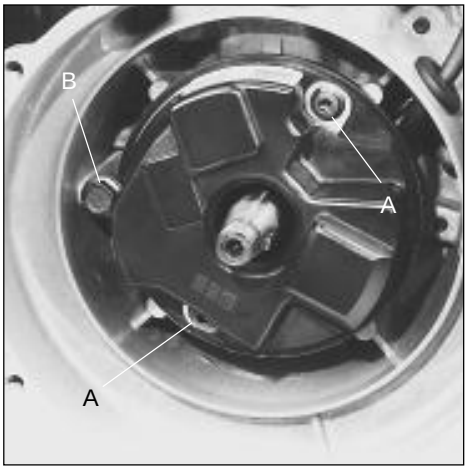


Contents

The task of the crankshaft is to transfer the reciprocating motion of the piston to rotation. To do this requires a stable design withstanding immense pressure, rotational and bending strain as well as high rotational speed. In addition the connecting rod is exposed to large acceleration and retardation forces as it moves between top and bottom dead centres. This puts special demands on the bearings that must withstand quick changes in load. Besides, the bearing's roller retainer also must cope with high temperatures and friction. Therefore it is extremely important when servicing, to check the roller retainer for cracking, wear and miscolouration due to overheating.

The crankshaft is journalled in the crankcase on heavy-duty ball bearings. In addition to the journalling point for the crankshaft, the crankcase acts as scavenging pump for the fuel/air mixture when this is "sucked" from the carburettor and is forced into the cylinder's combustion chamber. The crankcase must be perfectly sealed so as not to affect this pump function. There cannot be any leakage either from the crankshaft or between the crankcase halves or between the crankcase and the cylinder.

Always replace the sealing rings and gaskets when servicing the crankcase.



Replace the sealing ring - ignition side

Model 265

Dismantle the flywheel and ignition module.

Replace the sealing ring - ignition side

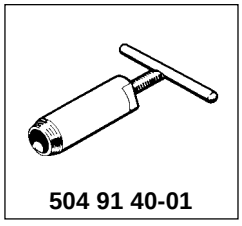
Model 265

The sealing ring can be replaced without splitting the crankcase.

Dismantle the flywheel.

Undo the six allen bolts (A) and loosen the bolt (B) enough so that the ignition module can be lifted out.

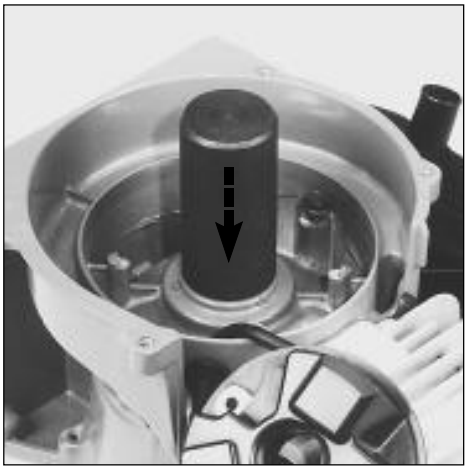
Dismantle the sealing ring with the puller.



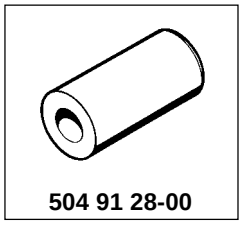
504 91 40-01

Screw on the puller 504 91 40-01 as far as it will go between the crankshaft and the sealing ring.

Pull the sealing ring out of the crankcase.



Lubricate the shaft extension and fit a new sealing ring.

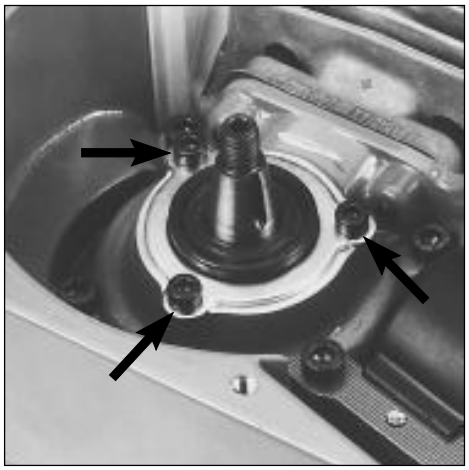


504 91 28-00

Lubricate the shaft extension with a few drops of engine oil and place a new sealing ring in position with the metal cover facing outwards.

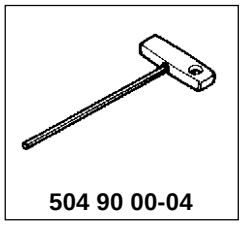
Press in the sealing ring until it is level with the crankcase.

Use e.g. punch 504 91 28-00.



Model 250

Dismantle the flywheel and the washer over the sealing ring.



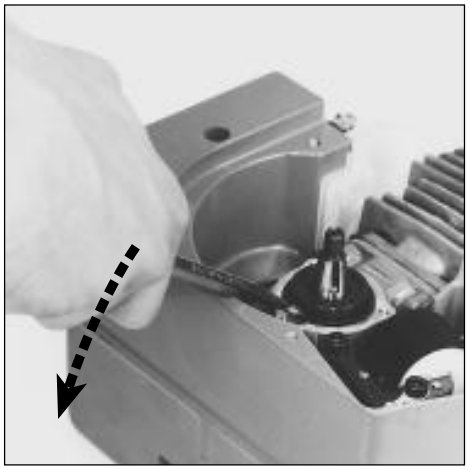
504 90 00-04

Model 250

Dismantle the covers and ignition system incl. the flywheel. See chap. “Ignition system”.

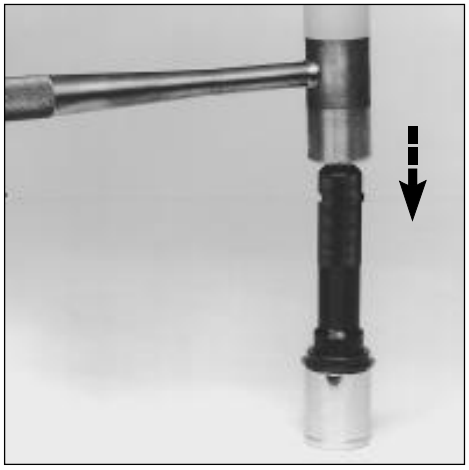
Remove the three bolts holding the washer over the seal holder.

Use allen key 504 90 00-04.

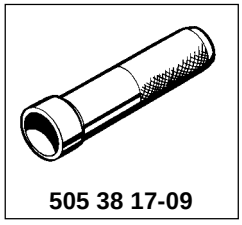


Remove the seal holder.

Press out the seal holder by using a screwdriver.



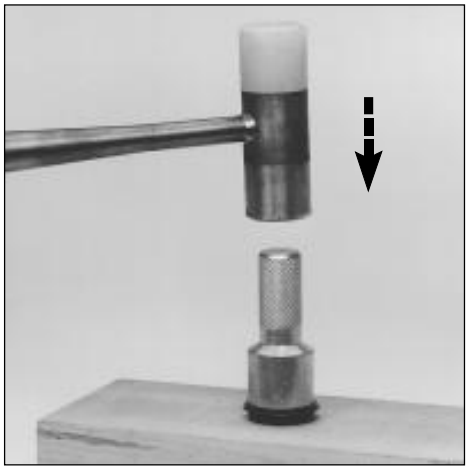
Remove the sealing ring from the holder.



505 38 17-09

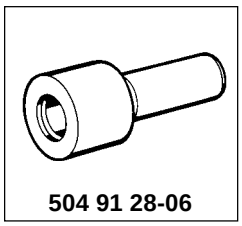
Remove the sealing ring from the holder using punch 505 38 17-09.

Use a suitable tubular sleeve as a drift.



Fit a new sealing ring.

Check that the O-ring is not damaged and fit the holder.



504 91 28-06

Fit a new sealing ring.

Turn the sealing ring so that the metal cover faces outwards.

Use a suitable punch, e.g. 504 91 28-06.

Check that the O-ring between the seal holder and the bearing in the crankcase is not damaged.

Change the O-ring if it does not seal as intended.

Lubricate the crankshaft and fit the holder.

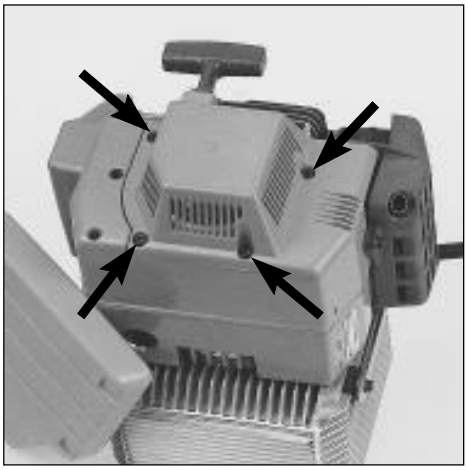
Model 250PS

Dismantle the fuel tank.

Model 250PS

First dismantle the fuel tank, which is placed outside of the starter.

Remove the 4 screws (two on each side) holding the tank on the crankcase.



Dismantle the cylinder cover, starter and flywheel.

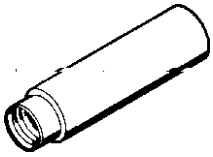
Let the tank remain suspended by the fuel hose.

Dismantle the cylinder cover.

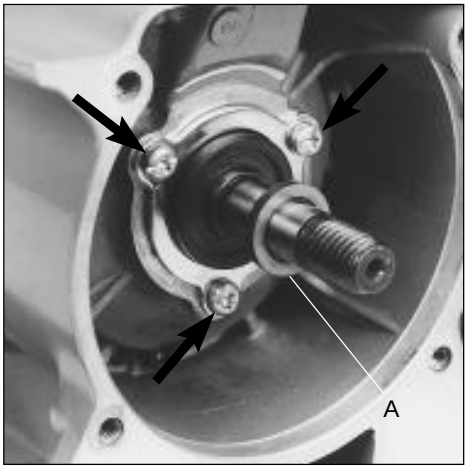
Remove the screws and lift off the starter.

Dismantle the flywheel by using the push bar no 505 26 79-12.

The sealing ring is now accessible for replacement in the same way as described for model 250.



505 26 79-12



Replacing the sealing ring - clutch side

Model 265

Dismantle the centrifugal clutch so that the sealing ring is accessible.

Remove the seal holder and change the sealing ring.

Replacing the sealing ring - clutch side

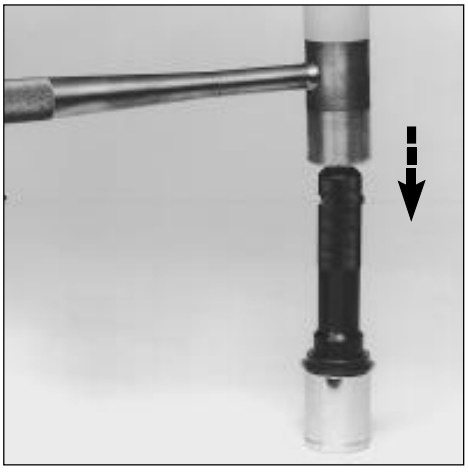
Model 265

The sealing ring can be changed without splitting the crankcase.

Dismantle the clutch and remove the spacer (A).

Undo the three bolts that hold the cover over the seal holder.

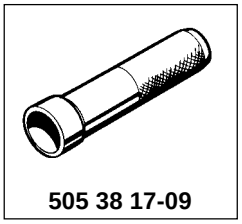
Remove the seal holder and replace the sealing ring as described for model 250 (ignition side).



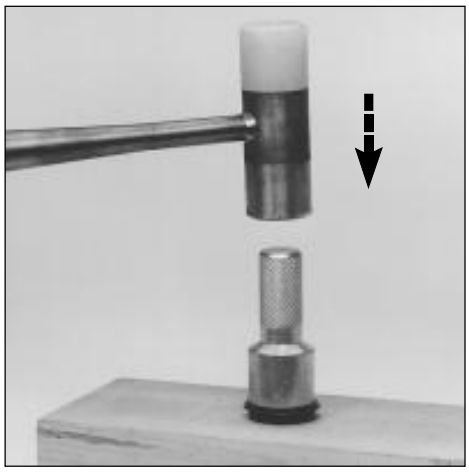
Take out the sealing ring from the holder.

Take out the sealing ring from the holder using punch 505 38 17-09.

Use a suitable tubular sleeve as a drift.

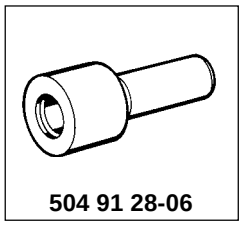


505 38 17-09



Fit a new sealing ring.

Check whether the O-ring is damaged and fit the holder.



504 91 28-06

Fit a new sealing ring in the holder.

Turn the sealing ring so that the metal cover faces outwards.

Use a suitable punch, e.g. 504 91 28-06.

Check that the O-ring between the seal holder and the bearing in the crankcase is not damaged.

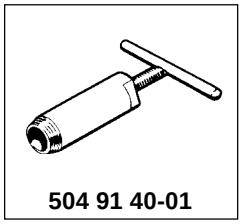
Change the O-ring if it does not seal as intended.

Lubricate the crankshaft and fit the holder.

Model 250

Dismantle the clutch so that the sealing ring is accessible.

Dismantle the sealing ring using a puller.



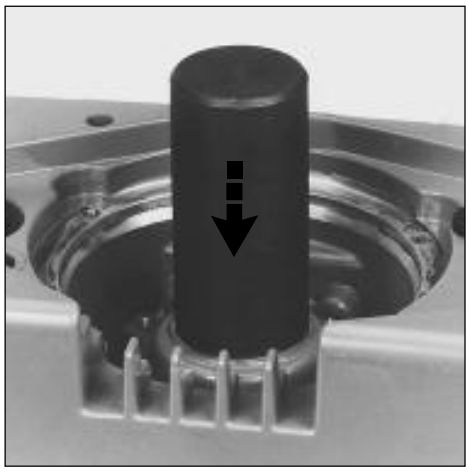
504 91 40-01

Model 250

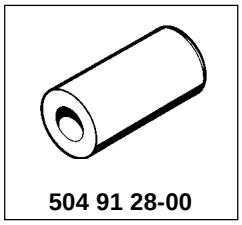
Dismantle the clutch. See chap. “Centrifugal clutch”.

Screw on the puller 504 91 40-01 as far as it will go between the crankshaft and the sealing ring.

Thereafter pull the sealing ring out of the crankcase.



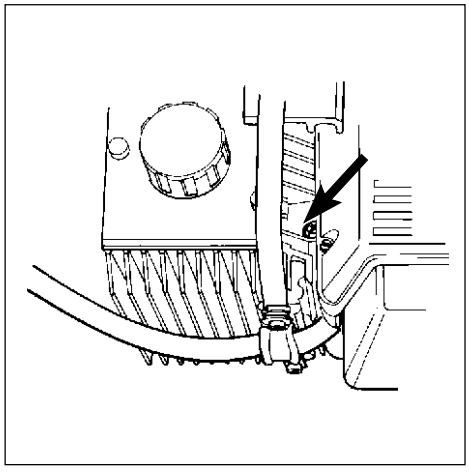
Lubricate the shaft extension and fit a new sealing ring.



504 91 28-00

Lubricate the shaft extension with a few drops of engine oil and place a new sealing ring in position with the metal cover facing outwards. Press in the sealing ring until it is level with the crankcase.

Use e.g. punch 504 91 28-00.



Model 250PS

Dismantle the hydraulic oil tank, the adapter between the engine body and the hydraulic oil tank and the clutch.

Now replace the sealing ring in the same way as described for model 250.

Model 250PS

Dismantle the hydraulic oil tank from the engine body. See chapter “Centrifugal clutch”.

Remove the clutch.

See chapter “Centrifugal clutch”.

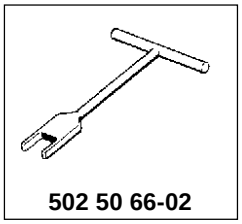
Dismantle the adapter between the engine body and the hydraulic oil tank by removing the 4 screws.

Now replace the sealing ring in the same way as described for model 250.

Replacing the vibration damper

Model 250

Use tool no. 502 50 66-02 to dismantle / assemble the rubber vibration dampers to avoid damaging them.



502 50 66-02

Replacing the vibration damper

Model 250

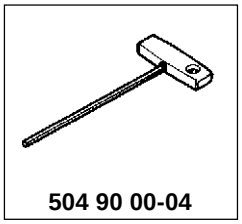
Dismantle the cylinder cover and clutch housing/shaft. Also see chap. “Centrifugal clutch”.

Use tool no. 502 50 66-02 to dismantle/ assemble the rubber vibration dampers.

NOTE!

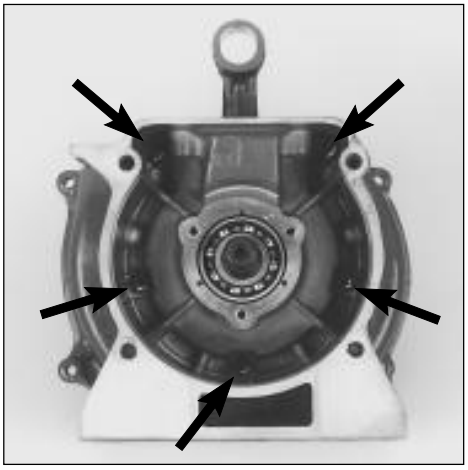
Make sure the tool also grips under the metal washer on the damper. Otherwise the rubber must absorb all the turning force and can be damaged.

Use an allen key to dismantle the spring type vibration damper.



504 90 00-04

If the vibration damper is of a spring type use an allen key no. 504 90 00-04 to dismantle.



Stripping the crankcase

Model 265

Dismantle all parts so only the crankcase and crankshaft remain.

Remove the crankcase bolts.

Stripping the crankcase

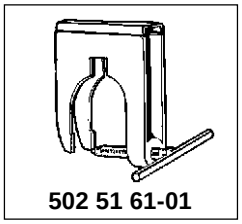
Model 265

Dismantle all parts so only the crankcase and crankshaft remain.

See respective chapters.

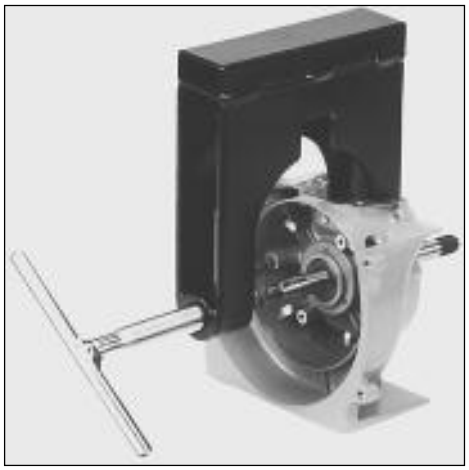
Remove the 5 bolts holding the crankcase halves.

Separate the crankcase halves.

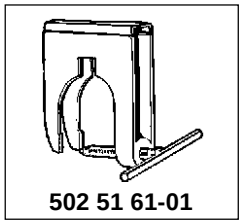


502 51 61-01

Place the puller 502 51 61-01 on the clutch side's crankcase half and separate the two halves.

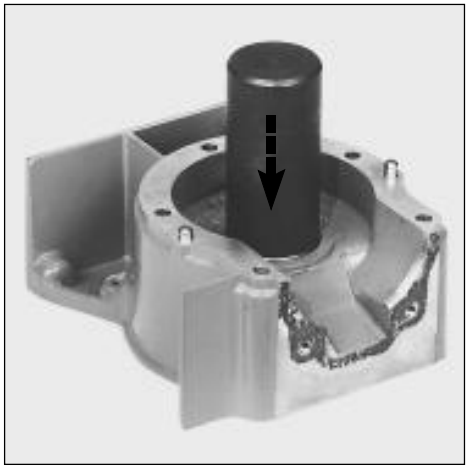


Press out the crankshaft.

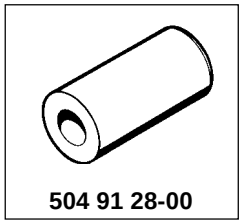


502 51 61-01

Use the same puller and press the crankshaft out of the ignition side's crankcase half.



Remove the bearings and sealing rings from the crankcase halves.



504 91 28-00

Carefully heat the crankcase halves to 150 – 200°C using a hot air gun.

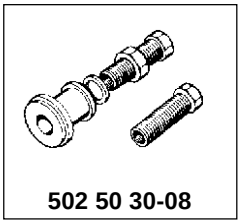
Dismantle the bearing by using a punch or by hitting the crankcase halve against a wooden block until the bearing falls out of its seating.

Press out the sealing rings from the crankcase halves on ignition and clutch sides.

Assembling the crankcase

Model 265

Clean all components and fit the bearing on the crankshaft.



502 50 30-08

Assembling the crankcase

Model 265

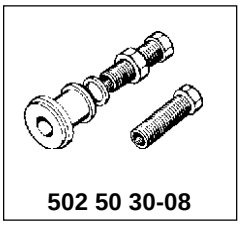
Clean all components before assembly.

Check the crankshaft with regard to wear and damage. See section “Inspecting the crankshaft”.

Fit the bearing on the crankshaft.

Use assembly tool 502 50 30-08 on the ignition side.

Fit the crankshaft in the ignition side's crankcase half.



502 50 30-08

Carefully heat the ignition side's crankcase half to 150 – 200°C and position the crankshaft.

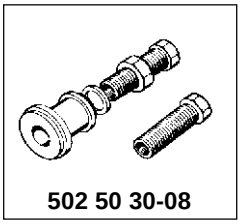
NOTE!

Insert the crankshaft correctly. The shaft extension with the taper is the ignition side.

Use assembly tool 502 50 30-08 if necessary.

Fit the drive side's crankcase half.

Make sure that the gasket is not misaligned.



502 50 30-08

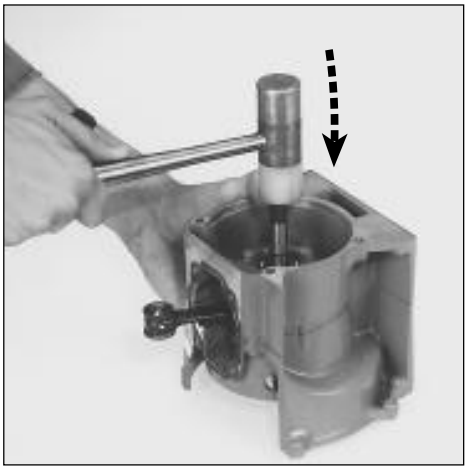
Place the gasket in position on the ignition side's crankcase half. Attach using a little grease.

Heat the clutch side's crankcase half to 150 – 200°C and place over the crankshaft.

Use assembly tool 502 50 30-08 if necessary.

Tip!

It is recommended that the crankcase bolts are inserted to guide the gasket before the crankcase half is fully installed.



Tighten all the crankcase bolts.

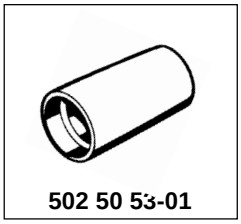
Check that the crankshaft rotates easily.

Tighten all the crankcase bolts crosswise.

Cut off any excessive gasket from the cylinder base surface.

Rotate the crankshaft by hand. If it runs tightly apply a few *light* blows to the shaft extensions using a plastic mallet so that the stress releases and the shaft rotates easily.

Fit new sealing rings and the remaining components.



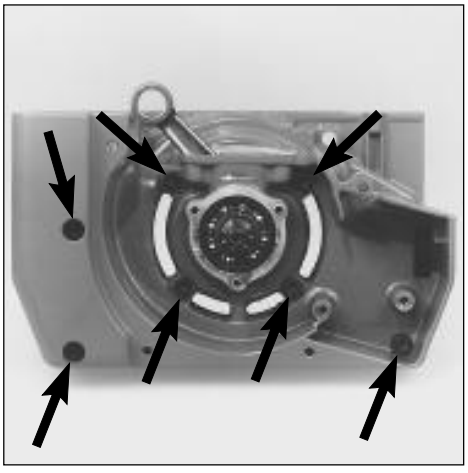
502 50 53-01

Fit new sealing rings to both the ignition and clutch sides.

Place assembly sleeve 502 50 53-01 on the clutch side's shaft extension to protect the sealing ring when its fitted.

NOTE!

Do not forget the O-ring between the bearing and the sealing ring.



Stripping the crankcase

Model 250

Dismantle all parts so only the crankcase and crankshaft remain.

Remove the crankcase bolts.

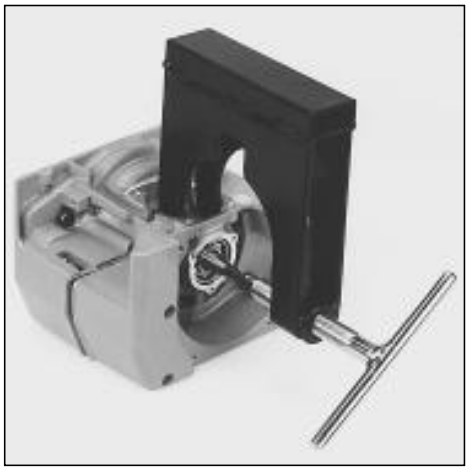
Stripping the crankcase

Model 250

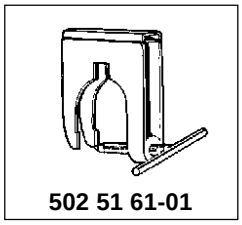
Dismantle all parts so only the crankcase and crankshaft remain.

Remove the 7 bolts holding the crankcase halves.

See respective chapters.

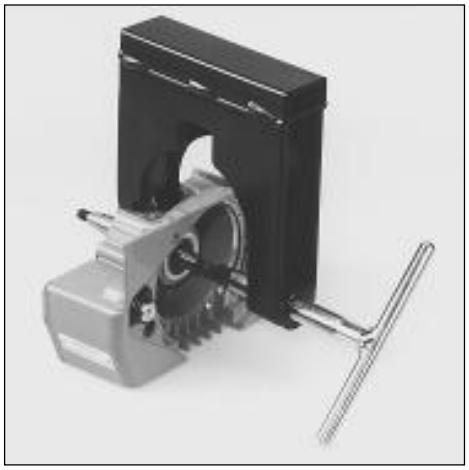


Separate the crankcase halves using puller no. 502 51 61-01.

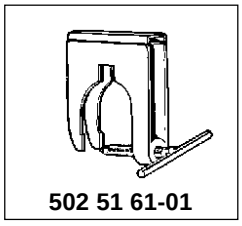


502 51 61-01

Separate the crankcase halves using puller no. 502 51 61-01.

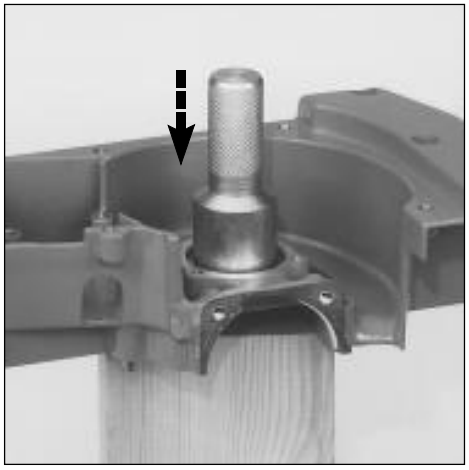


Press out the crankshaft from the crankcase half using puller no. 502 51 61-01.

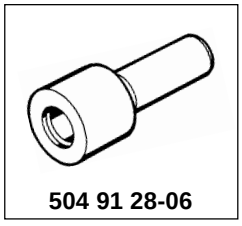


502 51 61-01

Press out the crankshaft from the crankcase half using puller no. 502 51 61-01.



Dismantle the bearings from the crankcase halves.

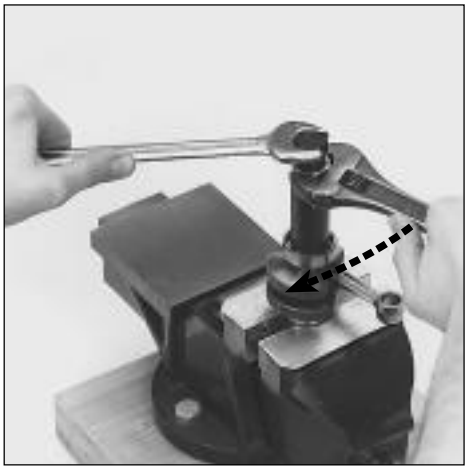


504 91 28-06

Carefully heat the crankcase halves to about 150°C.

Dismantle the bearing using a punch or by hitting the crankcase half against a wooden block until the bearing falls out of its seating.

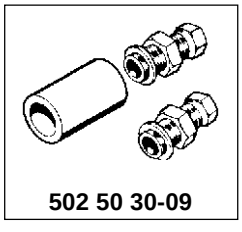
Press out the sealing ring from the clutch side's crankcase half.



Assembling the crankcase

Model 250

Clean all components and fit the bearing on the crankshaft.



502 50 30-09

Assembling the crankcase

Model 250

Clean all components before assembly.

Check the crankshaft with regard to wear and damage.

See section “Inspecting the crankshaft”.

Fit the bearing on the crankshaft.

Use assembly tool no. 502 50 30-09 (M8).

Fit crankshaft on the clutch side's crankcase.

Carefully heat the clutch side's crankcase to about 150°C and position the crankshaft.

NOTE!

Turn the crankshaft the right way. The shaft extension without the keyway on the clutch side.

Fit the ignition side's crankcase half.

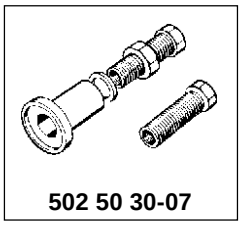
Make sure that the gasket is not misaligned.

Heat the ignition side's crankcase half (approx. 150°C).

Place the gasket in position on the drive side's crankcase half.

Attach using a little grease.

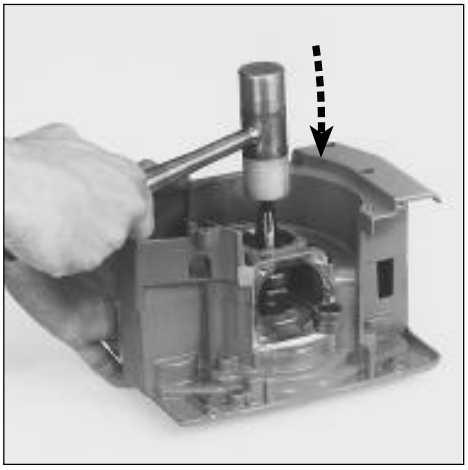
If necessary use assembly tools no. 502 50 30-07 + 502 50 30-09.



502 50 30-07

Tip!

It is recommended that the crankcase bolts are inserted to guide the gasket before the crankcase half is fully installed.



Tighten all the crankcase bolts.

Check that the crankshaft rotates easily.

Fit new sealing rings and the remaining components.

Tighten all the crankcase bolts crosswise starting closest to the crankshaft.

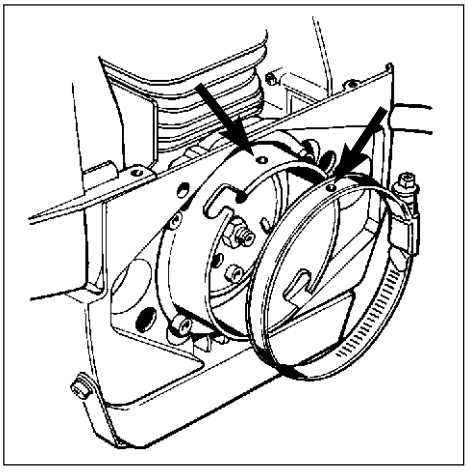
Cut off any excessive gasket from the cylinder base surface.

Rotate the crankshaft by hand. If it runs tightly apply a few light blows to the shaft extensions using a plastic mallet so that the stress releases and the shaft rotates easily.

Fit new sealing rings to both the ignition and clutch sides as previously described.

Lubricate the crank bearing and the main bearing with a few drops of oil before the piston and cylinder are fitted.

Fit the remaining components.



Model 250PS

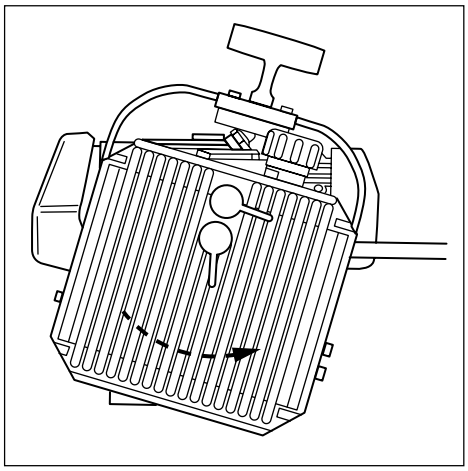
Screw the hydraulic oil tank adapter in the engine body.

Place the hose clip on the adapter.

Model 250PS

Screw the hydraulic oil tank adapter in the engine body.

Place the hose clip on the adapter so the little tab enters the hole in the adapter. Only tighten the hose clip so that it cannot be turned. This facilitates the assembly of the hydraulic oil tank.

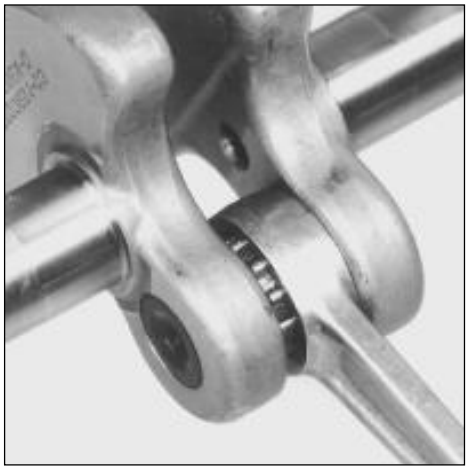


Slide the hydraulic oil tank in the adapter as far as it will go and then turn it anti-clockwise. (Bayonet fitting).

Tighten the hose clip.

Slide the hydraulic oil tank in the adapter as far as it will go and then turn it anti-clockwise. (Bayonet fitting).

Tighten the hose clip.



Inspecting the crankshaft

General

Check the connecting rod's big end.

Inspecting the crankshaft

General

The crankshaft cannot be renovated but must be replaced with a new one if it is worn or damaged.

Check the big end on the connecting rod. If there are signs of seizure, discolouration on the sides or damage to the needle seating the crankshaft should be replaced.

Check the connecting rod's little end.

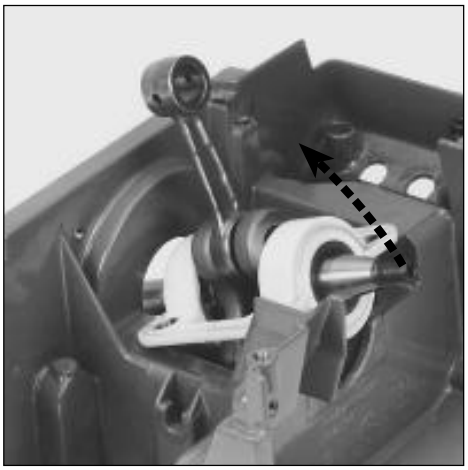
Check the little end on the connecting rod.

If there are signs of seizure, discolouration in the bearing race the crankshaft should be replaced.

Check the main bearing.

Check the main bearing. There should be no radial (up and down) play on the connecting rod.

However, there should be axial play, i.e. to provide good lubrication to the main bearing.



Dismantling the crankshaft

Models 240/245

Dismantle the crankshaft from the crankcase.

Dismantling the crankshaft

Models 240/245

Dismantle all the components surrounding the crankcase including the cylinder and piston.

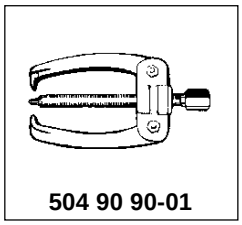
See respective chapters.

Lift out the crankshaft complete with bearings and bearing retainer from the crankcase.

Remove the bearing seats from the bearings.

Pull apart the bearing seat halves and remove them from the bearings using a screwdriver.

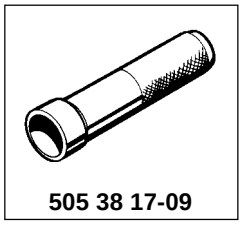
Dismantle the bearings from the crankshaft.



504 90 90-01

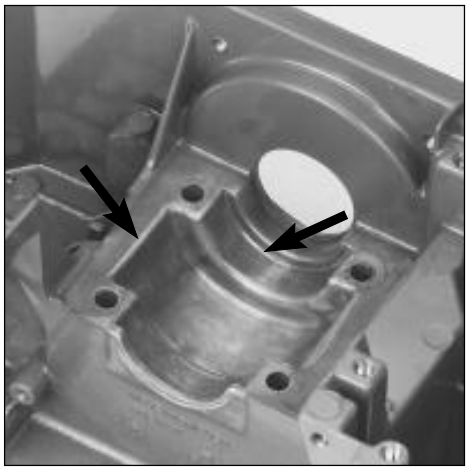
Dismantle the bearings from the crankshaft using puller no. 504 90 90-01.

Dismantle the sealing rings.



505 38 17-09

Press out the bearing rings from the bearing seats by using punch no. 505 38 17-09.



Assembling the crankshaft

Models 240/245

Check the crankshaft as set out in the section “Inspecting the crankshaft”.

Clean the crankcase's contact faces.

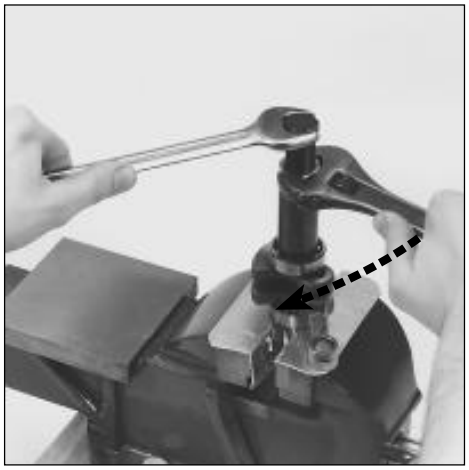
Assembling the crankshaft

Models 240/245

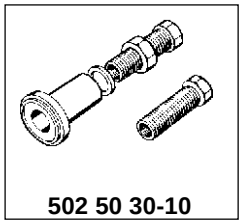
Check the crankshaft as set out in the section “Inspecting the crankshaft”.

Clean the crankcase's contact faces carefully removing sealant residue and grease.

Carefully use a screwdriver or flat scraper so as not to scratch the faces.



Fit the bearing on the crankshaft.

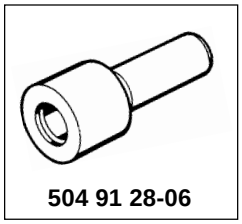


502 50 30-10

Fit the bearing on the crankshaft's ignition side using assembly tool no. 502 50 30-10.

Now fit the bearing on the crankshaft's clutch side in the same way.

Fit new sealing rings in the bearing retainer.

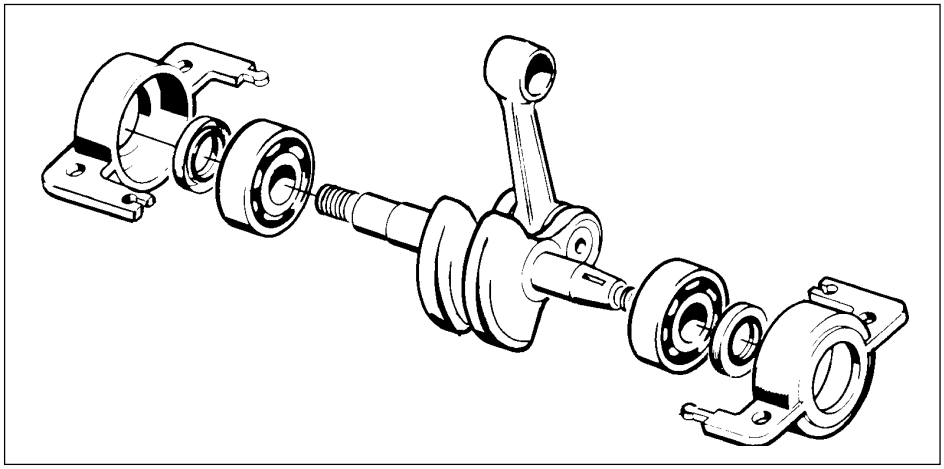


504 91 28-06

Fit new sealing rings in the bearing retainer using punch no. 504 91 28-06.

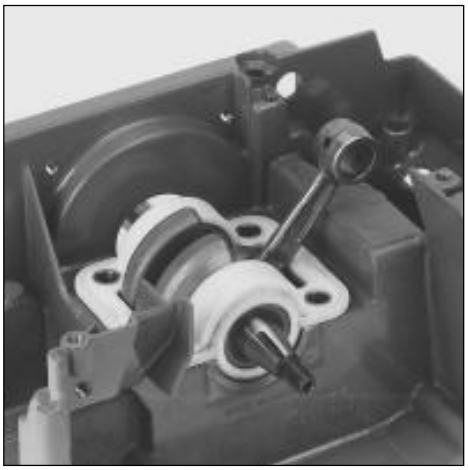
NOTE!

Turn the sealing rings so that the metal cover faces outwards from the engine.



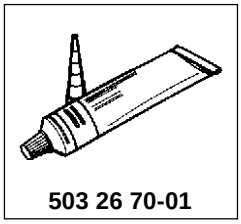
Lubricate the shaft extensions with a few drops of oil and fit the bearing seats onto the bearings.

Turn the seats so they lock into each other.



Place the crankshaft in the crankcase.

Use sealant no. 503 26 70-01.



503 26 70-01

Check that the contact faces on the bearing seats and crankcase are free of grease.

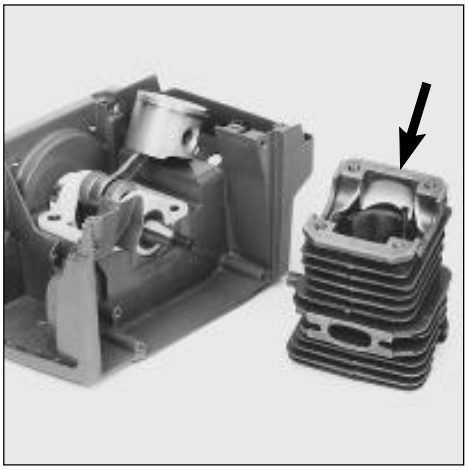
Apply a thin string (1–1.5 mm) of sealant (503 26 70-01) to the crankcase contact faces.

NOTE!

Only this sealant must be used.

Position the crankshaft.

Make sure it is facing the right way!

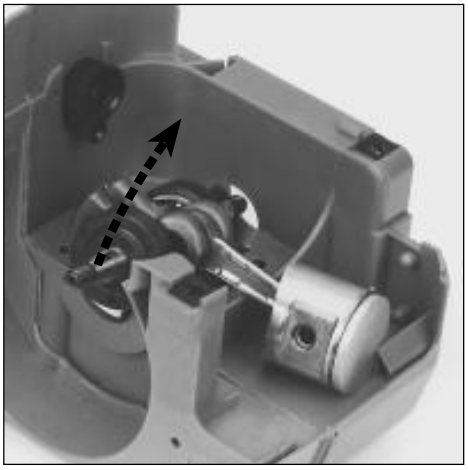


Fit the piston and cylinder.

Check that the contact faces on the cylinder are free of grease.

Fit the piston and cylinder.

See chapter “Cylinder and piston”.



Dismantling the crankshaft

Models 225/232/235

Lift out the crankshaft from the crankcase.

Dismantling the crankshaft

Models 225/232/235

Dismantle all the components surrounding the crankcase including the cylinder.

See respective chapters.

Lift out the crankshaft complete with bearings from the crankcase.

Dismantle the piston and pull off the bearings from the shaft extensions.

Dismantle the piston.

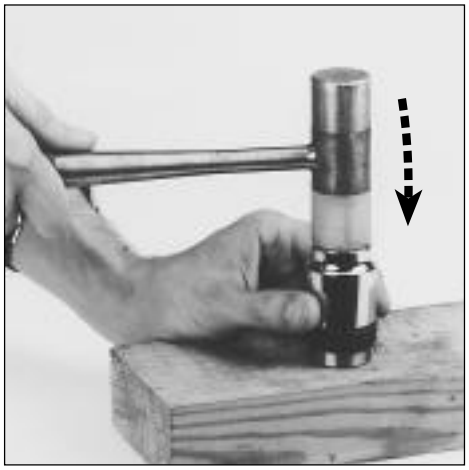
Pull off the bearings from the shaft extensions by hand.

Remove the seals from the bearing.

Always replace the seals.

Remove the old seal from the bearing by cutting a slot in the elastic casing and metal cup using a hacksaw.

Now pry the seal from the bearing using a screwdriver.



Fit a new seal on the bearing.

Press a new seal on the bearing by using a punch that presses against the sealing ring's outer edges.

Assembling the crankshaft

Models 225/232/235

Check the crankshaft as set out in the section “Inspecting the crankshaft”.

Fit the bearing on the crankshaft.

Fit the piston.

Assembling the crankshaft

Models 225/232/235

Check the crankshaft as set out in the section “Inspecting the crankshaft”.

Lubricate the crankshaft's shaft extensions using a few drops of oil and slide the bearing on by hand.

Fit the piston on the connecting rod.

NOTE!

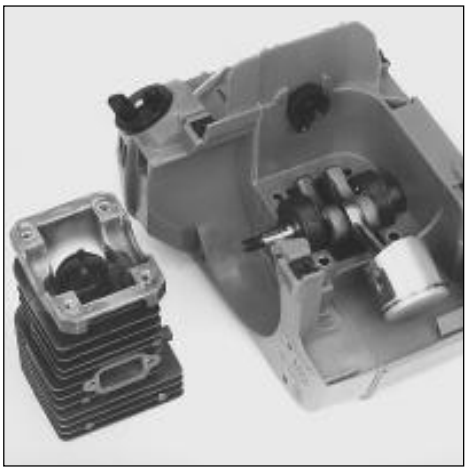
Turn the piston the right way. The arrow facing the exhaust port.

Position the crankshaft in the crankcase.

Position the crankshaft in the crankcase.

NOTE!

No sealant is required in the bearing seatings.

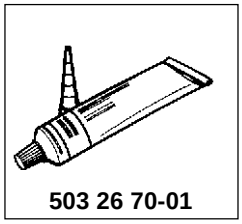


Fit the cylinder.

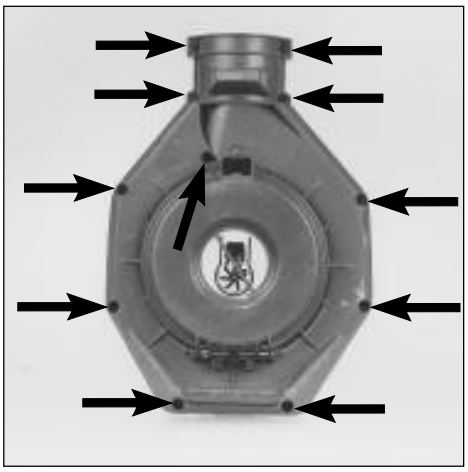
Make sure the contact faces on the cylinder and crankcase are clean from sealant and grease.

Apply a thin string (1–1.5 mm) of sealant to the bottom of the cylinder and fit the cylinder.

See chap. “Cylinder and piston”.



503 26 70-01



Dismantling/assembling the crankshaft

Model 225HBV

Dismantle the lower half of the blower unit.

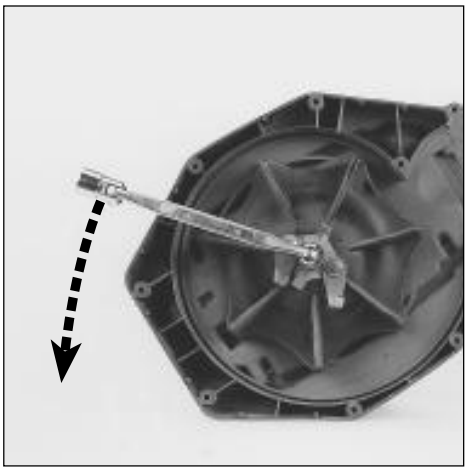
Remove the steel rail.

Dismantling/assembling the crankshaft

Model 225HBV

Remove all screws (11) holding the lower half of the blower unit and lift off this.

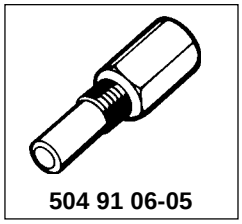
Remove the steel rail.



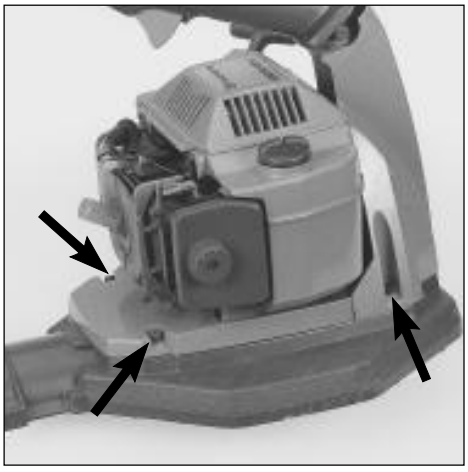
Dismantle the blades and impeller.

Replace the spark plug with piston stop no 504 91 06-05.

Unscrew the centre nut and lift off the blades and impeller.



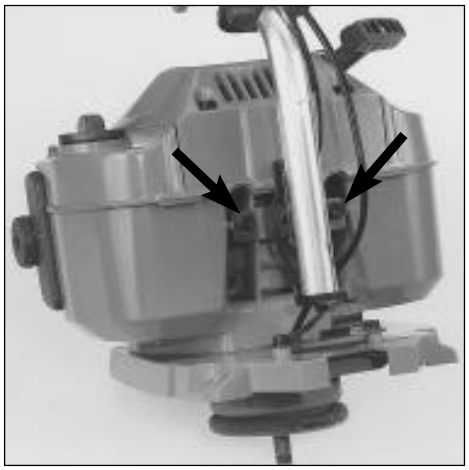
504 91 06-05



Dismantle the upper half of the blower unit and lift off the cover over the handle.

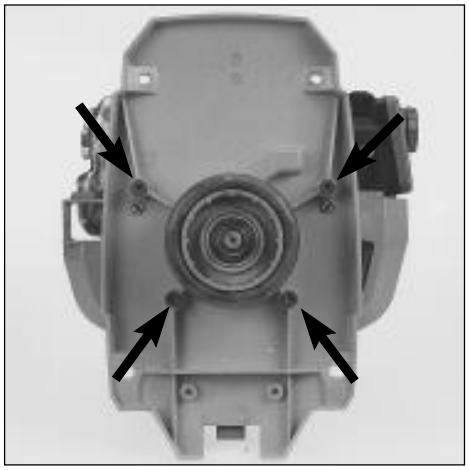
Remove the 4 screws (2 on each side) holding the upper half of the blower unit.

Lift off the cover over the handle.



Remove the 2 bolts holding the handle on the crankcase.

Remove the 2 bolts holding the handle on the crankcase.

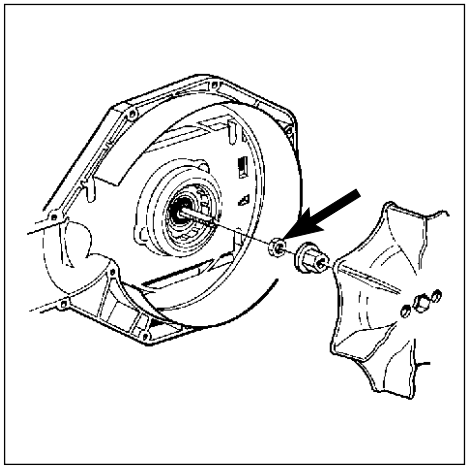


Separate the engine body and handle part and dismantle all components around the crankcase.

Remove the 4 screws.

Separate the handle part and engine body.

Dismantle all components around the crankcase. See respective chapters.



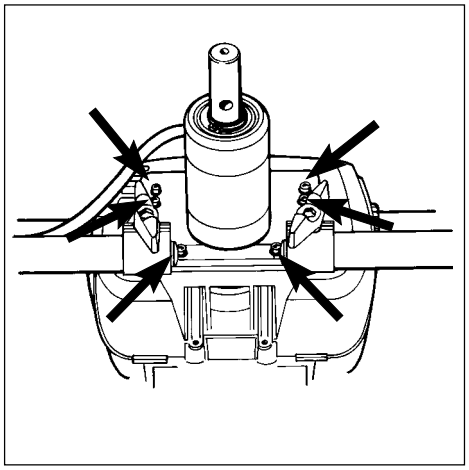
Dismantle and assemble the crankcase in the same way as described for models 225/232/235.

Dismantle and assemble the crankcase in the same way as described for models 225/232/235.

NOTE!

Check when assembling that the throttle cable and short-circuit cable are not pinched.

Do not forget the spacer nut that should lie closest to the crankcase!



Dismantling/assembling the crankshaft

Models 225AI15, 225AI25

Dismantle the gearbox from the engine body.

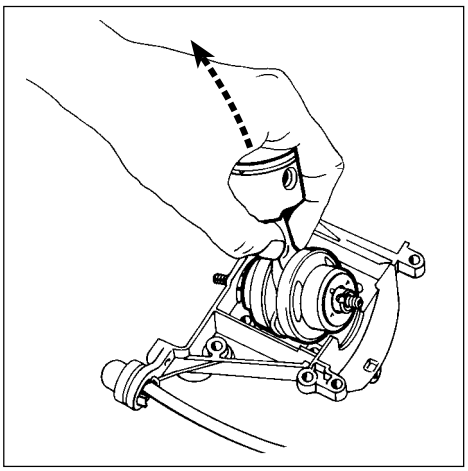
Dismantle and assemble the crankcase in the same way as described for models 225/232/235.

Dismantling/assembling the crankshaft

Models 225AI15, 225AI25

Remove the 6 screws holding the gearbox on the engine body and lift off the gearbox.

Dismantle all components around the crankcase and dismantle and assemble the crankshaft in the same way as described for models 225/232/235.



Dismantling the crankshaft

Models 322, 325

Dismantle all components so that only the crankcase and crankshaft remain.

Now lift the crankshaft out of the crankcase.

Dismantling the crankshaft

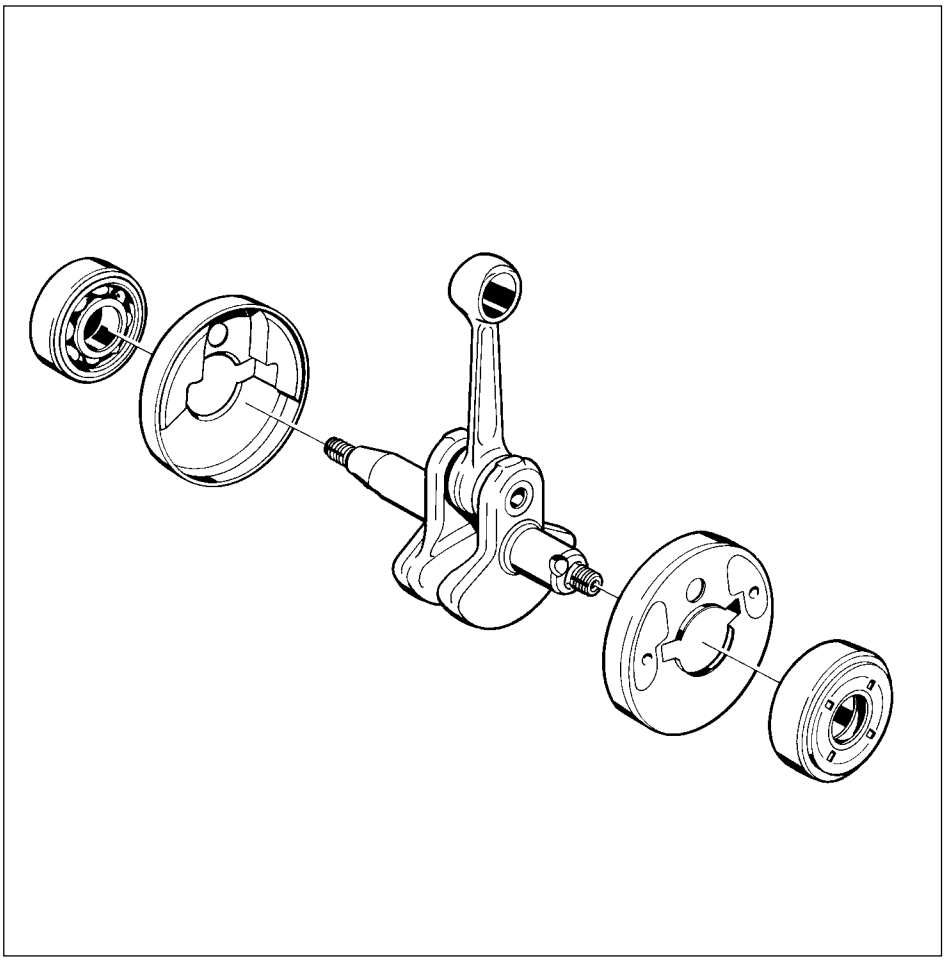
Models 322, 325

Dismantle all components so that only the crankcase and crankshaft remain.

See respective sections for detailed information if necessary.

Now lift the crankshaft out of the crankcase.

Remove the bearing (sliding fit) and the spacer washers.



Assembling the crankshaft

Models 322, 325

Check the crankshaft as set out in the section “Checking the crankshaft”.

Clean the contact surfaces on the crankcase.

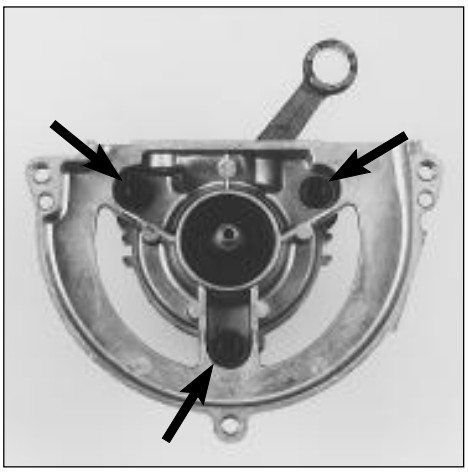
Fit new bearings on the crankshaft with the open side facing in towards the crank disc.

Lubricate the big-end bearing with a few drops of engine oil and position the crankshaft in the crankcase.

Assemble all the remaining parts in the reverse order as set out for dismantling.

See respective sections if necessary.

Leakage test the crankcase according to the instructions in the section “Leakage testing the crankcase”.



Stripping the crankcase

Model 122

Dismantle all parts so only the crankcase and crankshaft remain.

Remove the crankcase bolts.

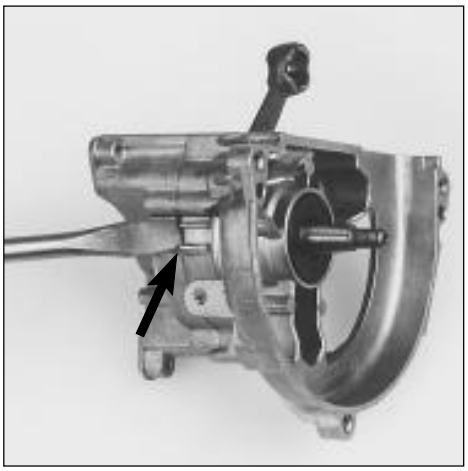
Stripping the crankcase

Model 122

Dismantle all parts so only the crankcase and crankshaft remain.

See respective chapters.

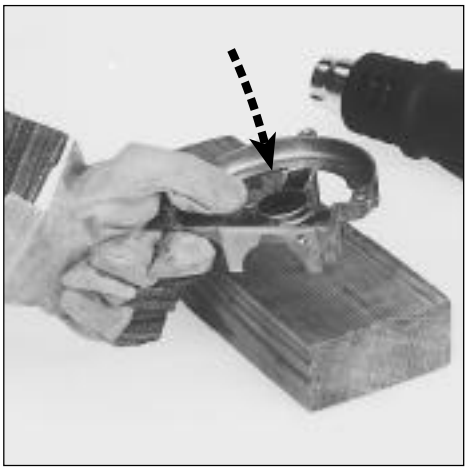
Remove the 3 bolts holding the crankcase halves.



Separate the crankcase halves using a screwdriver.

Insert a wide blade screwdriver in between the raised sections on the crankcase halves and pry open the crankcase.

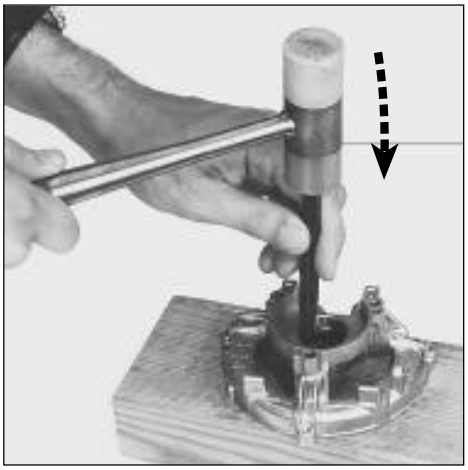
Lift out the crankshaft.



Dismantle the bearing.

Carefully heat the crankcase halves using a hot air gun to approx. 150°C.

Dismantle the bearing using a punch or by hitting the crankcase half against a wooden block until the bearing falls out of its seating.



Dismantle the sealing rings.

Press out the ignition side's sealing ring using a punch.

Let the circlip between the bearing and sealing ring remain in the crankcase half.

Press out the sealing ring from the clutch side's crankcase half.

Assembling the crankcase

Model 122

Clean all components.

Inspect the crankshaft with regard to wear and damage.

Fit new sealing rings in the crankcase halves.

505 38 17-09

Assembling the crankcase

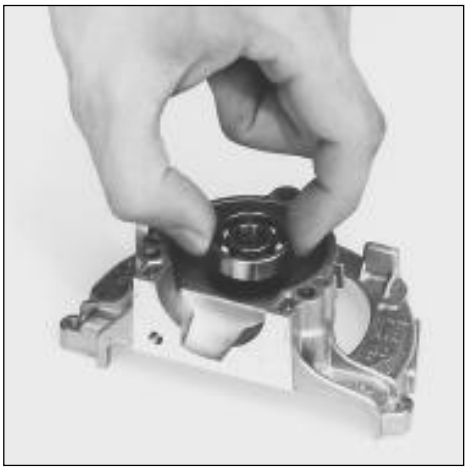
Model 122

Clean all components.

Check the crankshaft according to section “Inspecting the crankshaft”.

Fit new sealing rings in the crankcase halves using suitable punches, e.g. 505 38 17-09 for the clutch side.

Press in the sealing rings level with the crankcase.



Fit the bearings in the crankcase halves.

Heat the crankcase halves to about 150°C using a hot air gun and position the bearings.

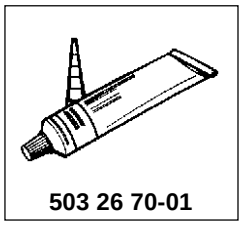
Make sure they sit against the circlip or the stop in the bearing seat.

Position the crankshaft on the ignition side's crankcase half and apply a thin string of sealant to the contact face.

Position the crankshaft on the ignition side's crankcase half.

Check that the contact faces on the crankcase halves are free from grease and old gasket residue.

Apply a thin string (1 – 1.5 mm) of sealant 503 26 70-01 on the crankcase halves' contact faces.

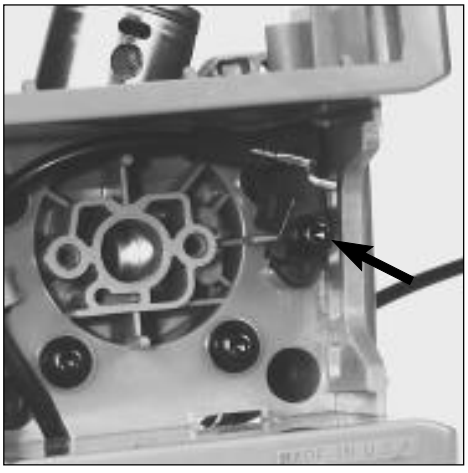


503 26 70-01

Fit the clutch side's crankcase half and tighten the crankcase bolt.

Slide the clutch side's crankcase half over the crankshaft by hand and tighten the 3 crankcase bolts.

Assemble the remaining parts in the reverse order set out for dismantling.



Stripping the crankcase

Model 32

Dismantle all parts so only the crankcase and crankshaft remain.

Dismantle the throttle cable and its holder.

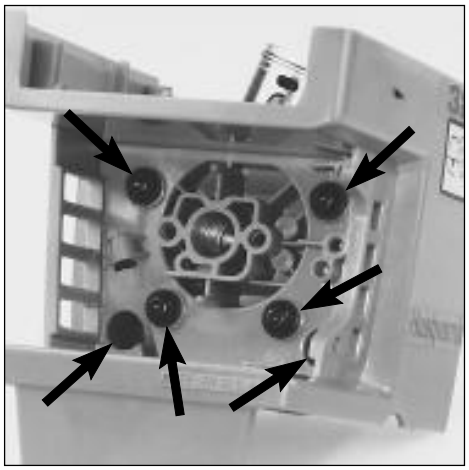
Stripping the crankcase

Model 32

Dismantle all parts so only the crankcase and crankshaft remain.

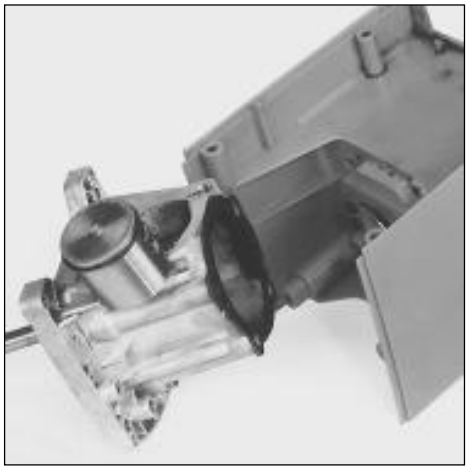
See respective chapters.

Remove the screw and plastic components that hold the throttle so the crankcase bolts are accessible.



Remove the bolts holding the crankcase halves together.

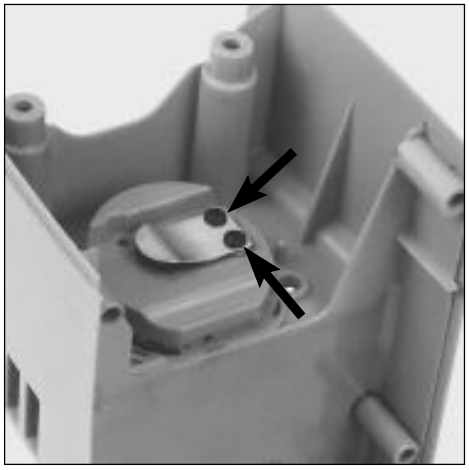
Remove the 6 bolts holding the crankcase halves together.



Carefully separate the halves.

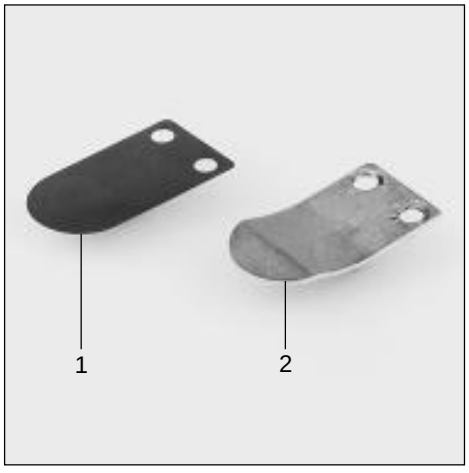
Carefully separate the halves.

Use a screwdriver to facilitate separating as sealant has been used on both sides of the gasket.



Dismantle the intake valve.

Remove the 2 bolts holding the intake valve.



Check the reed valve (1) and movement limiter (2) with regard to wear and damage.

Inspect the reed valve (1). If it is cracked, worn or shows signs of corrosion it should be replaced.

Also check the movement limiter (2) with regard to wear and damage.

Check the contact face on the intake manifold.

Check the contact face on the intake manifold.

It is extremely important for the engine's low speed characteristics that the reed valve seals correctly against the intake manifold.

NOTE!

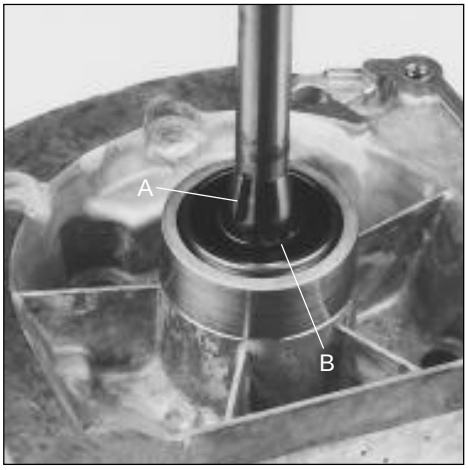
Check when assembling that the reed valve is in the centre of the intake manifold.

Lift out the connecting rod complete with piston.

Lift out the connecting rod complete with piston.

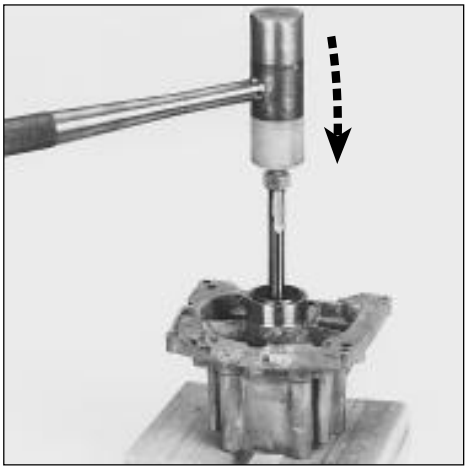
Note which way the connecting rod was facing. The connecting rod bearing with the small insertion spacing should face the crank disc.

Clean off any gasket or sealant residue from the crankcase half.



Remove the key and circlip.

Remove the key (A) using side cutters and the circlip (B).



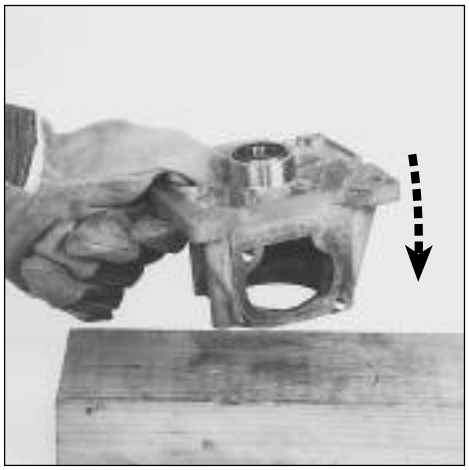
Knock out the crankshaft from the crankcase using a plastic mallet.

Screw on the flywheel nut on the crankshaft and knock out the shaft using a plastic mallet.

Place a block of wood under the crankcase so the crankshaft comes free.

NOTE!

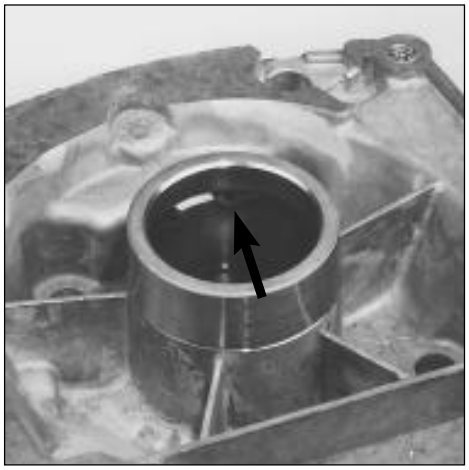
Turn the crankshaft so that the crank disc does not hit the crankcase.



Dismantle the bearing.

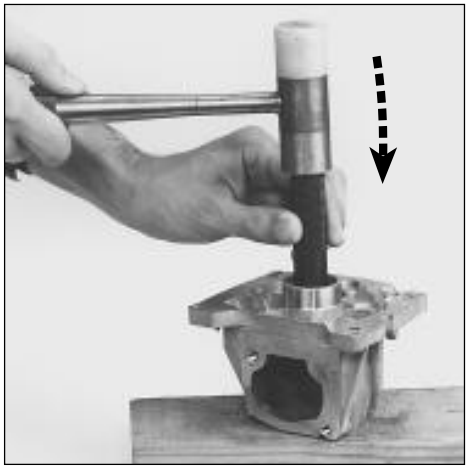
Heat the crankcase to approx. 150°C using a hot air gun and dismantle the bearing by knocking the crankcase against a wooden block.

Use a suitable punch and hammer if necessary.



Dismantle the sealing ring.

Remove the circlip on the ignition side (let the other circlip remain in place) and press out the sealing ring using a punch and hammer.



Assembling the crankcase

Model 32

Fit a new sealing ring in the crankcase.

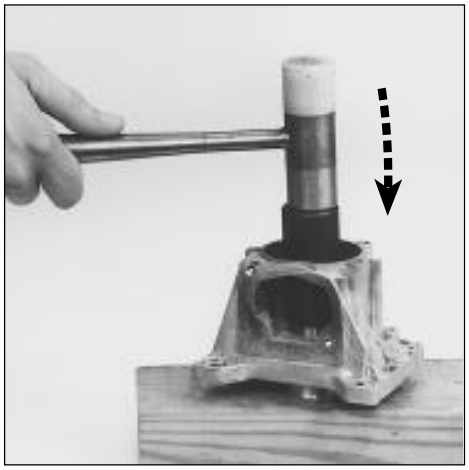
Fit the circlip.

Assembling the crankcase

Model 32

Fit a new sealing ring. Turn it so the scraper edge faces inwards and press it into place against the circlip using a suitable punch and hammer.

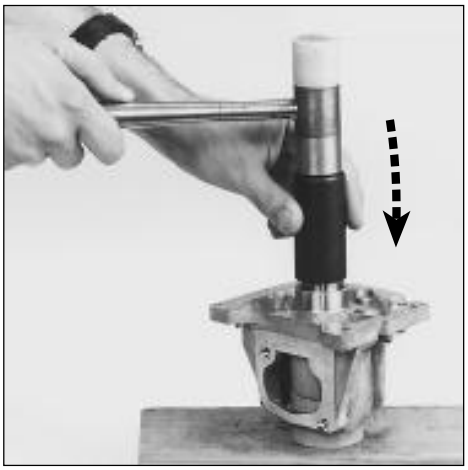
Fit the circlip and make sure it sits correctly in its groove.



Heat the crankcase and fit the inner bearing.

504 91 28-00

Heat the crankcase using a hot air gun to approx. 150°C and position the inner bearing. Adjust if necessary using punch no. 504 91 28-00 so the bearing rests against the circlip.



Grease and position the outer bearing.

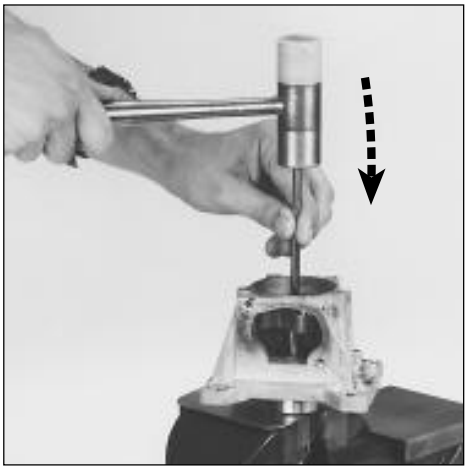
Make sure the dust seal faces outwards.

Turn the crankcase while its still warm and position the outer bearing.

NOTE!

Grease using bearing grease and fit it with the dust seal facing outwards.

Make sure the bearing is sitting against the circlip.



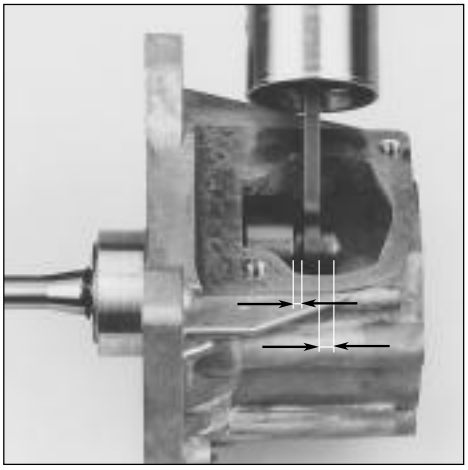
Fit the crankshaft in the crankcase.

Fit the circlip on the crankshaft.

Fit the crankshaft while the crankcase and bearing are still warm.

Press in the crankshaft using a suitable brass punch and hammer.

Check that the shaft can rotate freely and fit the circlip on the shaft.



Fit the connecting rod on the crank pin.

Fit the connecting rod on the crank pin.

NOTE!

Turn the connecting rod so it comes as close to the bearing as possible.

Assemble the remaining components in the reverse order set out for dismantling.

Stripping the crankcase

Model Mondo

Dismantle all parts so only the crankcase and crankshaft remain.

Remove circlip (A).

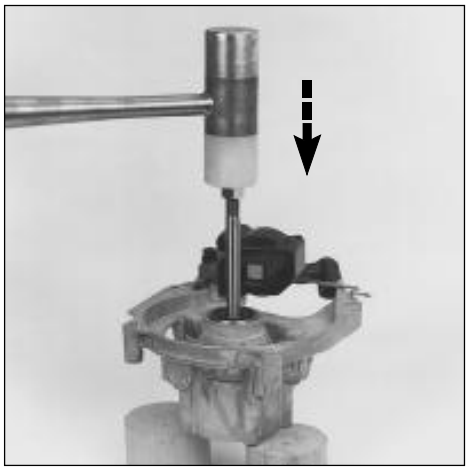
Stripping the crankcase

Model Mondo

Dismantle all parts so only the crankcase and crankshaft remain.

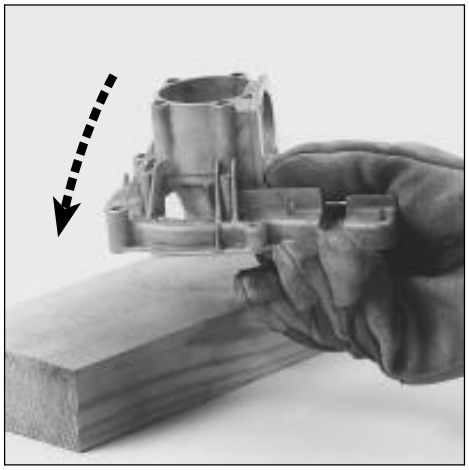
See respective chapters.

Remove circlip (A).



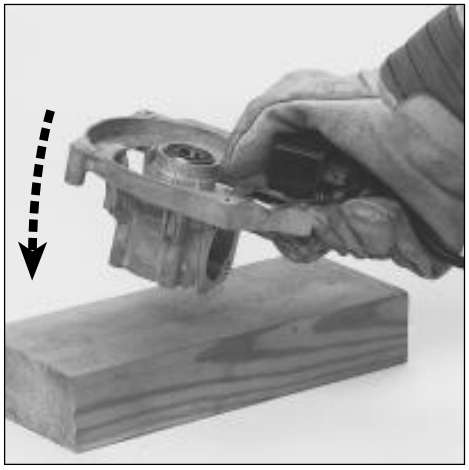
Knock the crankshaft out of the crankcase using a plastic mallet.

Screw the flywheel nut on the crankshaft and knock out the shaft using a plastic mallet.



Dismantle the bearing on the ignition side.

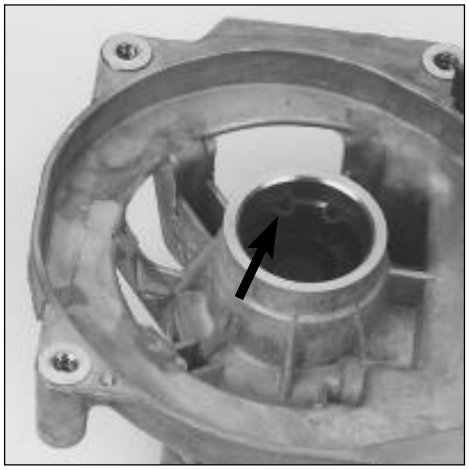
Heat the crankcase to approx. 150°C and dismantle the bearing on the ignition side by knocking the crankcase against a wooden block.



Dismantle the other bearing *inwards.*

Dismantle the other bearing *inwards.*

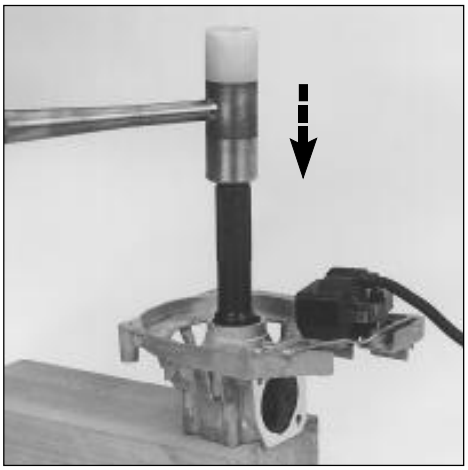
You may need to knock out the bearing using a punch.



Dismantle the circlip on the ignition side and knock out the sealing ring.

Dismantle the circlip on the ignition side, but let the circlip on the other side of the sealing ring remain in place.

Knock out the sealing ring using a suitable punch and hammer.



Assembling the crankcase

Model Mondo

Fit a new sealing ring in the crankcase.

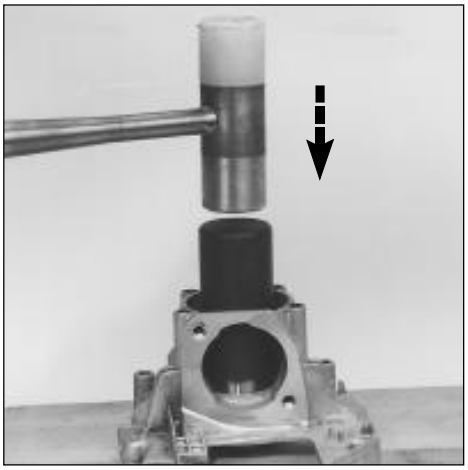
Fit the circlip.

Assembling the crankcase

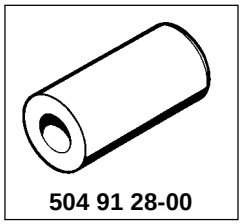
Model Mondo

Fit a new sealing ring in the crankcase. Turn it so the scraper edge faces inwards.

Fit the circlip and make sure it sits correctly in its groove.



Grease and fit the bearing in the crankcase.



504 91 28-00

Lubricate the bearing with grease.

Carefully heat the crankcase and fit the bearing in the crankcase.

Use punch no. 504 91 28-00 to press the bearing level with the crankcase.

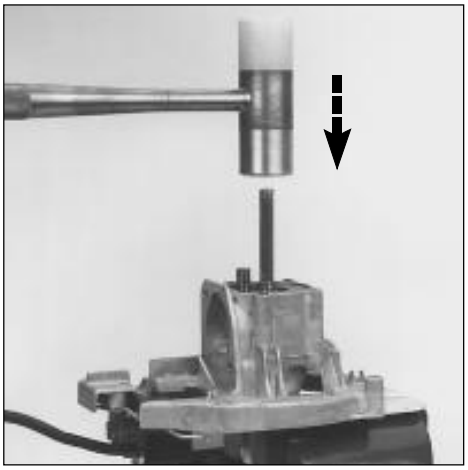
Grease and fit the dust sealed bearing while the crankcase is still warm.

Grease the dust sealed bearing and position it while the crankcase is still warm.

NOTE!

The dust sealed side of the bearing should face outwards.

Make sure the bearing rests against the circlip.



Fit the crankshaft in the crankcase.

Lubricate the crankshaft with a few drops of oil and slide it in the bearing.

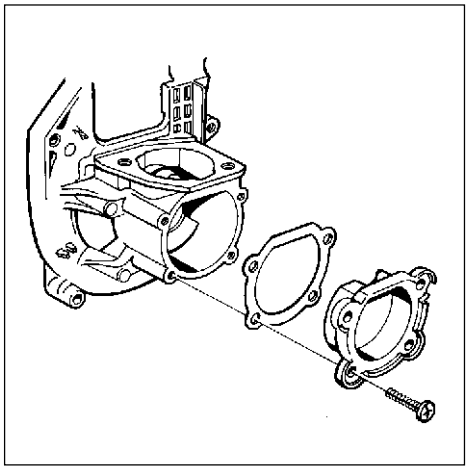
Use a hammer and suitable punch to press the shaft down towards bearing.

Check that the crankshaft can rotate freely and fit the circlip.

Check that the crankshaft can rotate freely.

Lightly knock the shaft extension with a plastic hammer until the crankshaft rotates freely.

Fit the circlip and the remaining components in the reverse order set out for dismantling.



Dismantling the crankcase

Model 18H

Dismantle all components so that only the crankcase and crankshaft remain.

Remove the cover over the crankcase.

Dismantling the crankcase

Model 18H

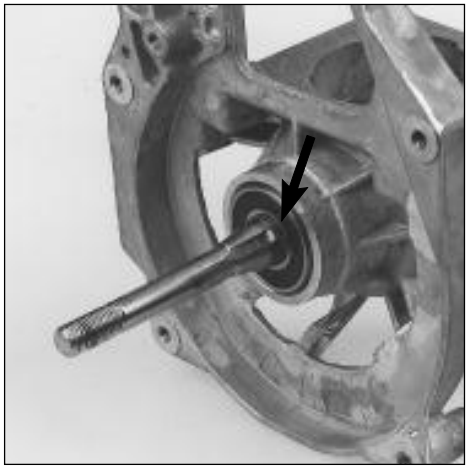
Dismantle all components so that only the crankcase and crankshaft remain.

See respective chapters if necessary.

NOTE!

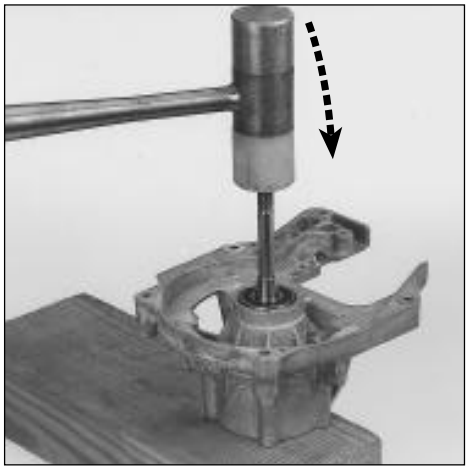
Mark which end of the crankshaft should face the piston.

Remove the cover over the crankcase. Carefully pry up with a screwdriver. Sealant has been used on both sides of the gasket.



Remove the circlip.

Remove the circlip on the spindle using circlip pliers.



Dismantle the crankshaft from the crankcase.

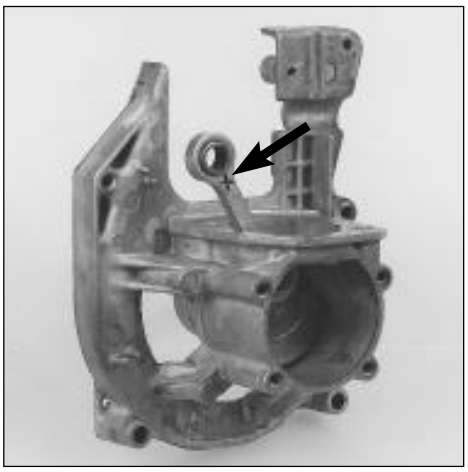
Dismantle the bearing and sealing rings.

Place a wooden block under the crankcase and press out the crankshaft by using a plastic hammer.

NOTE!

Turn the crankshaft so that the crank disc does not hit the crankcase.

Dismantle the bearings and sealing rings in the same way as described for model 32.



Assembling the crankcase

Model 18H

Fit a new sealing ring and circlip in the crankcase.

Fit the crankshaft's bearing

Fit the crankshaft in the crankcase and the circlip on the crankshaft.

Fit the connecting rod on the crankshaft journal.

Assembling the crankcase

Model 18H

Fit a new sealing ring in the crankcase.

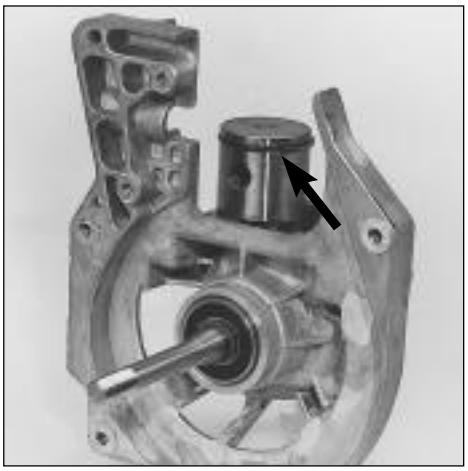
Fit the circlip and check that it lies correctly in its groove.

Fit the crankshaft's bearing.

Fit the crankshaft in the crankcase and the circlip on the crankshaft.

Fit the connecting rod on the crankshaft journal. Turn it so that the marked end faces towards the piston.

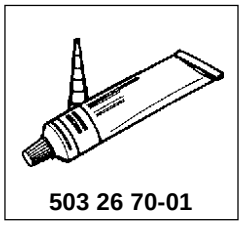
Assembly takes place in the same way as described for model 32.



Fit the piston on the connecting rod and the remaining parts in the reverse order as set out for dismantling.

Fit the piston on the connecting rod so that the piston ring's locking pin comes opposite the inlet port on the cylinder.

Assemble remaining parts in the reverse order as set out for dismantling.



503 26 70-01

NOTE!

Use sealant on both sides of the gasket on the cover over the crankcase.

Dismantling the crankcase

Models 140B, 141B

Dismantle all components so that only the crankcase and crankshaft remain.

Dismantling the crankcase

Models 140B, 141B

Dismantle all components so that only the crankcase and crankshaft remain.

See respective chapters if necessary.

TIP!

Note which way, e.g. the muffler is fitted to avoid uncertainty when assembling.

Remove the key in the crankshaft and the 4 crankcase bolts.

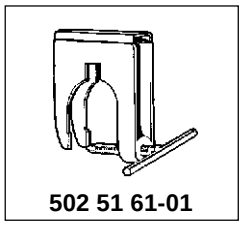
Lift off the fan side crankcase half.

Remove the key in the crankshaft and the four screws holding together the crankcase halves.

Lift off the fan side crankcase half.

Dismantling the crankshaft.

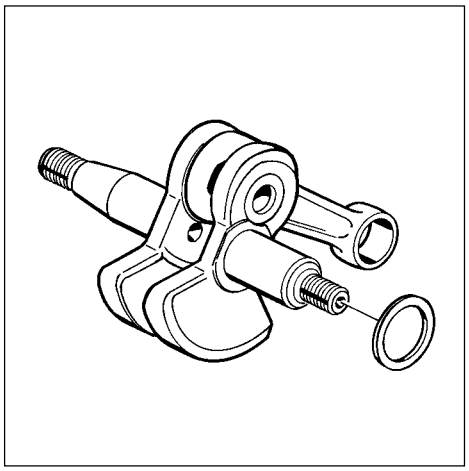
Dismantle the bearing and sealing rings.



502 51 61-01

Press out the crankshaft from the starter side's crankcase half using puller no. 502 51 61-01.

Dismantle the bearing and sealing rings after the crankcase half has been heated to approx. 150°C using a hot air gun.



Assembling the crankcase

Models 140B, 141B

Heat the crankcase halves and position the bearing.

Fit the sealing rings.

Fit the crankshaft in the starter side's crankcase half.

Assembling the crankcase

Models 140B, 141B

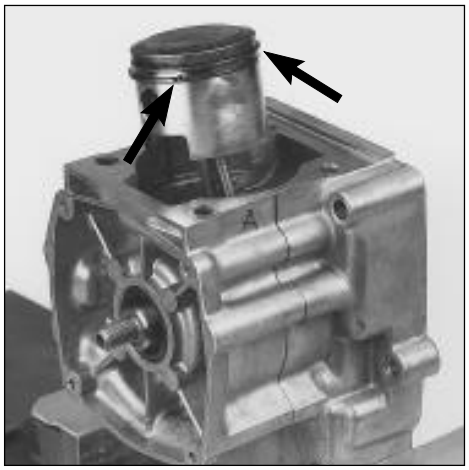
Heat the crankcase half to approx. 150°C using a hot air gun and position the bearing.

Fit the sealing rings with the metal case facing outwards.

Fit the crankshaft in the starter side's crankcase half before the bearing has time to cool.

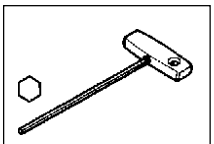
NOTE!

Do not forget the spacer washer between the crankshaft and the bearing.

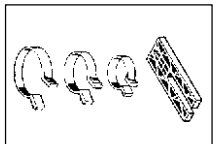


Position the fan side's crankcase half and tighten the 4 crankcase bolts.

Fit the piston with the locking pin facing the exhaust port on the cylinder.



504 90 00-03



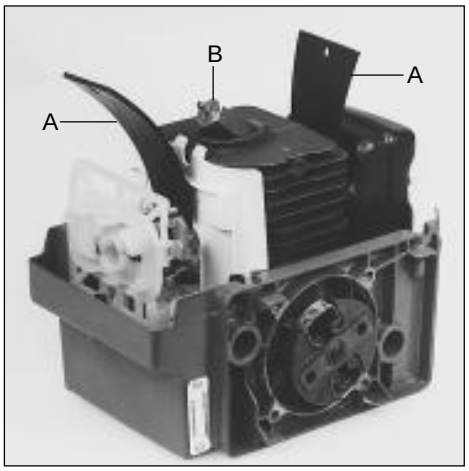
502 50 70-01

Place a new crankcase gasket in position. Secure it with a little grease so it does not slide out of position.

Position the fan side's crankcase half and tighten the 4 bolts.

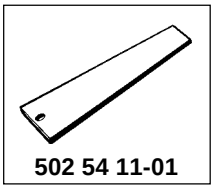
Fit the piston so that the locking pin faces the exhaust side of the cylinder.

Assemble remaining parts in the reverse order as set out for dismantling.

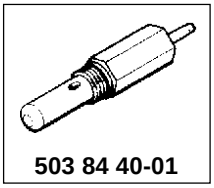


Leakage testing the crankcase

Fit the two sealing plates (A) and test pressure nipple (B).

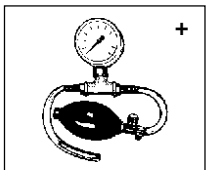


502 54 11-01

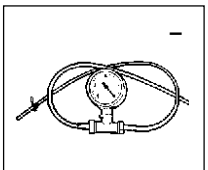


503 84 40-01

Connect the pressure gauge or vacuum gauge and check for leakage.



502 50 38-01



502 50 37-01

Leakage testing the crankcase

Fit a sealing plate (A) no. 502 54 11-01 between the carburettor and the intake manifold and a plate between the cylinder and the muffler.

Fit the test pressure nipple (B) no. 503 84 40-01 in the spark plug hole.

Connect the pressure gauge 502 50 38-01 to the nipple and pump a pressure of 50 kPa (0.5 kp/cm²) in the crankcase.

Max. permitted leakage:
20 kPa (0.2 kp/cm²) per 30 seconds.

Connect the vacuum gauge 502 50 37-01 to the nipple and lower the pressure in the crankcase to 50 kPa (0.5 kp/cm²).

Max. permitted leakage:

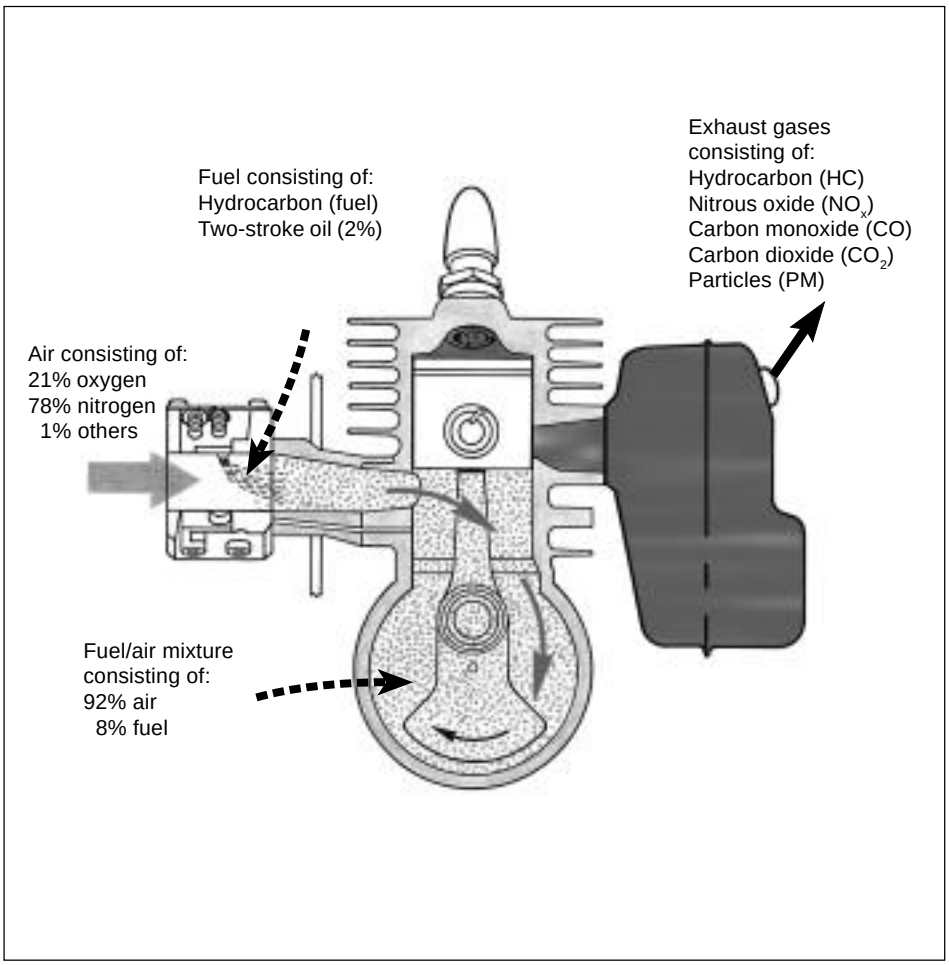
20 kPa (0.2 kp/cm²) per 30 seconds.

NOTE!

When pressurising the crankcase, leakage can occur on the induction manifold on those models that have a rubber induction manifold even if the limit of 0.5 kp/cm² is not exceeded. Let the sealing compound (Silicone) cure before the crankcase is pressurised or depressurised.

Any leakage can be difficult to localise if the crankcase is depressurised.

When leakage has been established with a vacuum, you can apply a slight overpressure (0.1–0.3 kp/cm²) and at the same time apply a layer of thin oil on the joints and the sealing ring's contact surfaces on the crankcase to make leak detection easier. Bubbles clearly mark the position of the leakage.



Husqvarna E-TECH

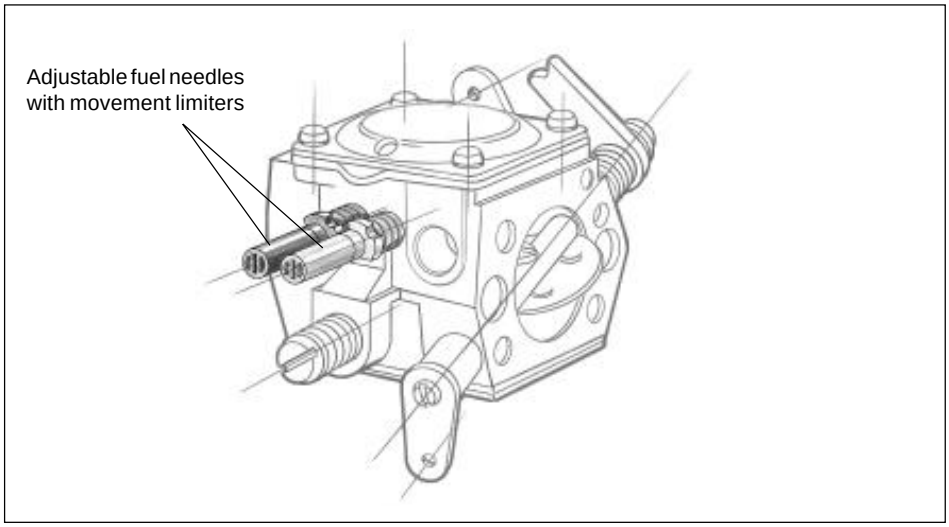
In 1996 Husqvarna presented a new, improved two-stroke engine as a part of the company's efforts to produce engines that emit smaller amounts of hazardous substances.

The new engine was given the designation E-TECH and was first used in a new brush cutter model.

More stringent environment regulations in the USA, which primarily involve a lowering of the hydrocarbons, nitrous oxides and carbon monoxide content, brought about the new engine design.

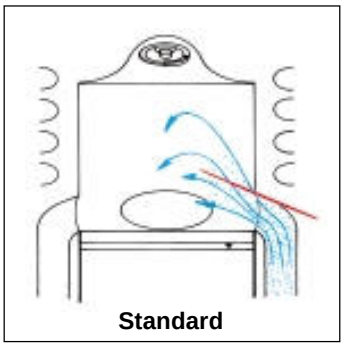
Environment degradation is reduced through decreasing the amount of unburnt gases (flushing losses) in the exhaust fumes.

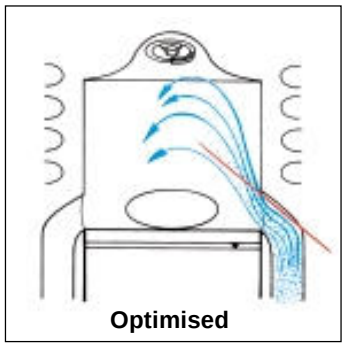
Comparisons between an E-TECH engine model 225 and the three year older engine design model 125 show that the CO content has been halved and the hydrocarbons and nitrous oxide contents have been reduced by close to 70%. In addition a powerful increase in output is gained.



What makes the E-TECH engine design unique is not a specific design solution but rather several solutions interacting to reduce flushing losses in the engine.

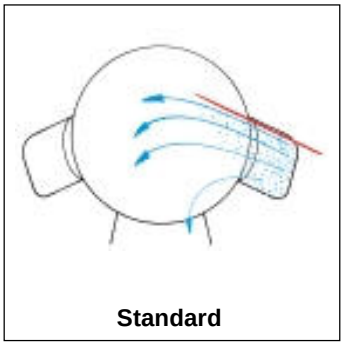
The carburettor's job is to mix the air and fuel in the right proportions to give a combustible mixture, irrespective of the speed and work load. The carburettor's adjustable needles have been fitted with movement limiters to prevent the engine from being run with a too "rich" fuel/air mixture. (Also see chapter "Fuel system").

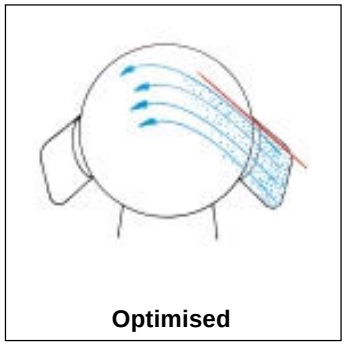

Standard

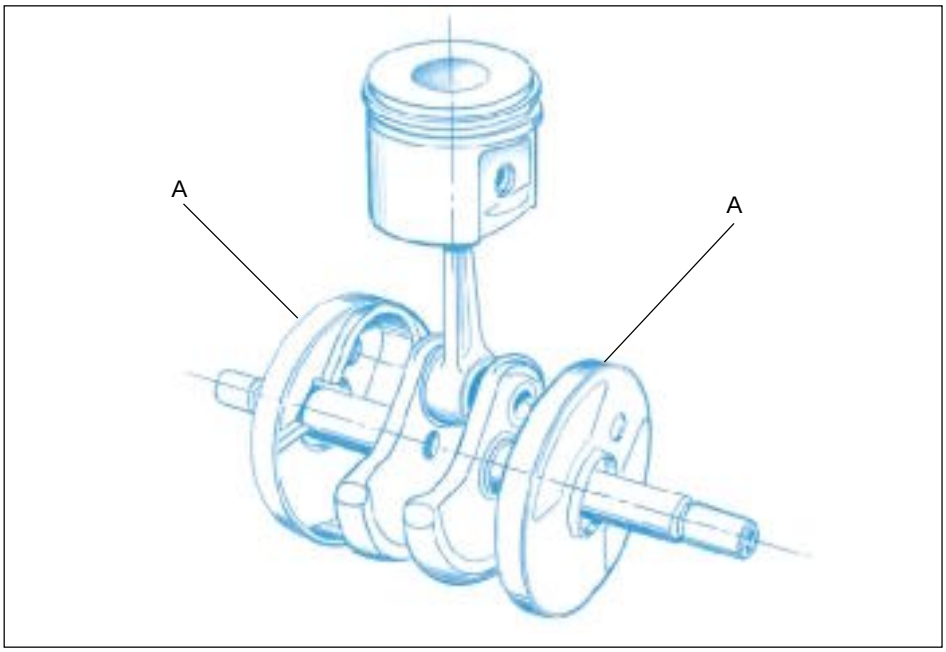

Optimised

The design of the flushing channels and flushing ports have a large effect on the flushing losses.

By finely adjusting the channels' cross section area and angle to the rear edge of the cylinder as well as modification of the channel's last upward section, flushing can be made more efficient (preventing a part of the oxidising gases from passing directly out in the exhaust channel).


Standard

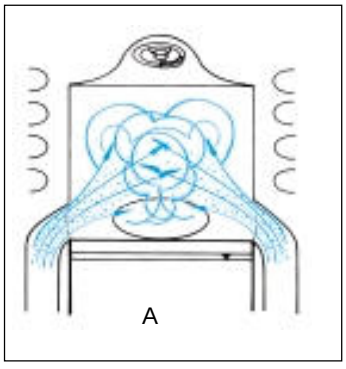

Optimised

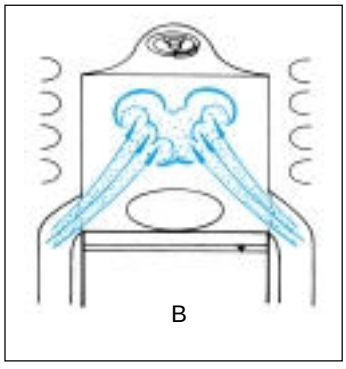


By reducing the area of the muffler's discharge opening the counter pressure is increased and a smaller amount of unburnt exhaust fumes come out of the muffler. Oxidising gases that flow up from the crankcase meet greater resistance from the exhaust fumes and a small amount reach the combustion chamber. A disadvantage of the increased counter pressure is the engine output decreases.

The crankcase pressure has been increased in the E-TECH engine so that a larger amount of oxidising gases can be pumped through the flushing channels to compensate for the output loss.

This has been achieved by filling the crankshaft's crank discs (A) to reduce the "dead" non active volume in the crankcase.


A

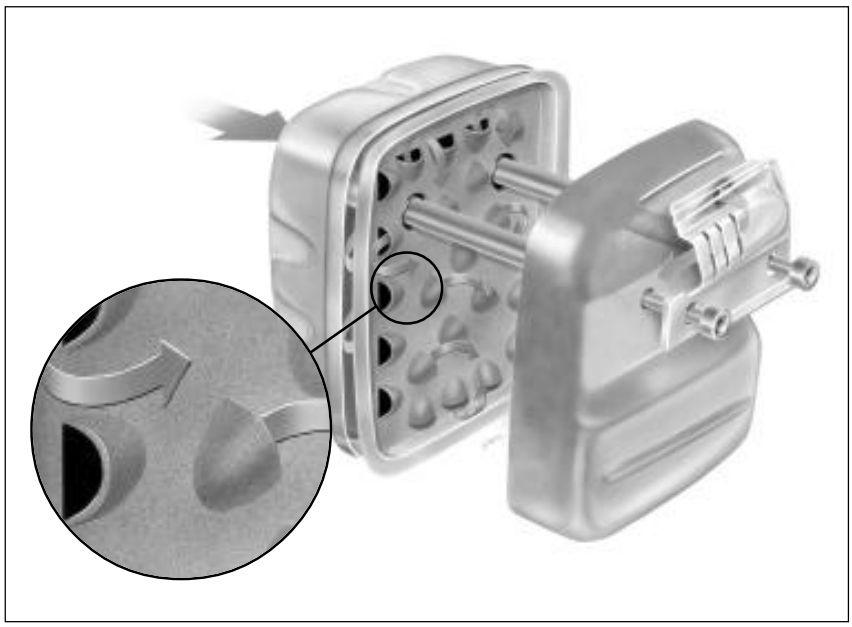

B

The consequence of a higher flush pressure is a more concentrated jet of oxidising gas up in the combustion chamber compared with a lower flush pressure.

The result is more efficient combustion and less flushing losses.

A = Low crankcase pressure

B = High crankcase pressure



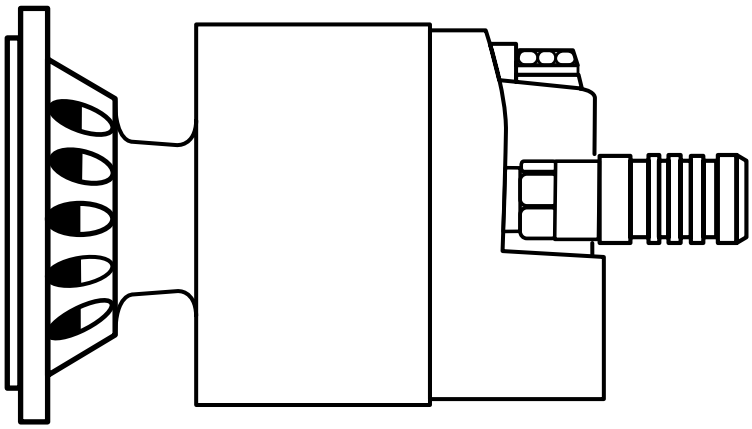
The remaining flushing losses and other exhaust residue are converted in the E-TECH engine's catalytic converter muffler.

The metallic lightweight catalytic converter is designed around a special baffle plate of metal in the muffler.

The plate is covered with a catalytic agent and fitted with specific thermodynamic conditional channels and guides to give the best gas flow over the catalytic agent.

Hydraulic unit

8.



Contents

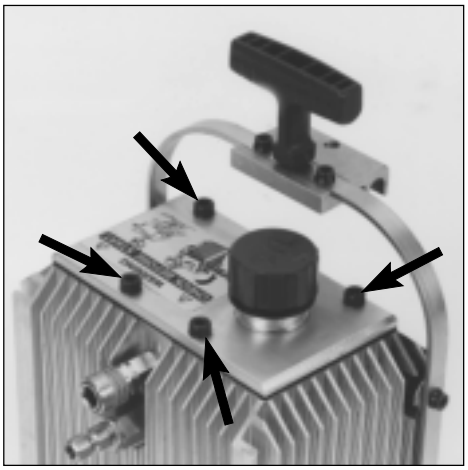
Hydraulics is an ideal solution to get a long and flexible power transmission between the engine and the cutting equipment.

This has been utilised on model 235P which is used for, e.g. tree pruning and on the pruning saw model 250PS. The power from the combustion engine is transferred to the hydraulic pump via a centrifugal clutch and from the pump to the cutting equipment via a flexible hydraulic hose.

NOTE!

The hydraulic pressure is high, and demands immense care if leakage around connections has occurred. Replace the gaskets and tighten the connections immediately once a leakage has been discovered.

Cleanliness is extremely important with all work on the hydraulic system.



Hydraulic pump

Dismantling, assembly
Model 250PS

Dismantle the hydraulic oil tank from the engine unit and then the clutch drum.

Remove the cover on the tank and drain off the hydraulic oil.

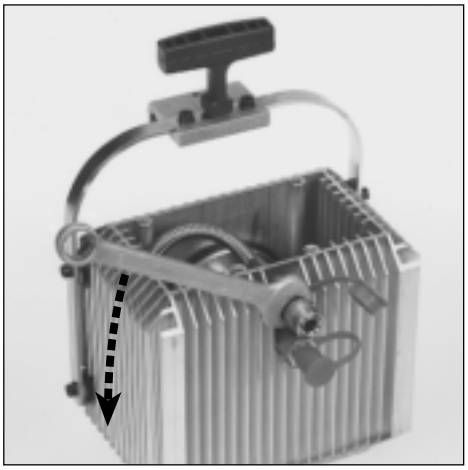
Hydraulic pump

Dismantling, assembly
Model 250PS

Dismantle the hydraulic oil tank from the engine unit and then the clutch drum as described in the chapter "Centrifugal clutch".

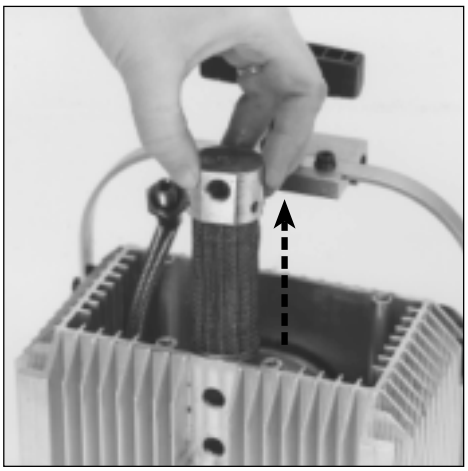
Remove the 4 screws and lift off the cover on the tank.

Drain off all the hydraulic oil.



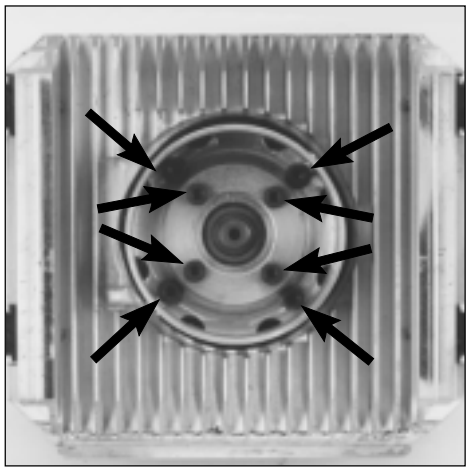
Unscrew the upper quick coupling and press the hydraulic oil hose in the tank.

Unscrew the upper quick coupling and press the hydraulic oil hose in the tank.



Dismantle the diffuser.

Remove the lower quick coupling and lift out the diffuser from the tank.



Remove the engine adapter.

Remove all 8 bolts holding the engine adapter on the hydraulic pump.

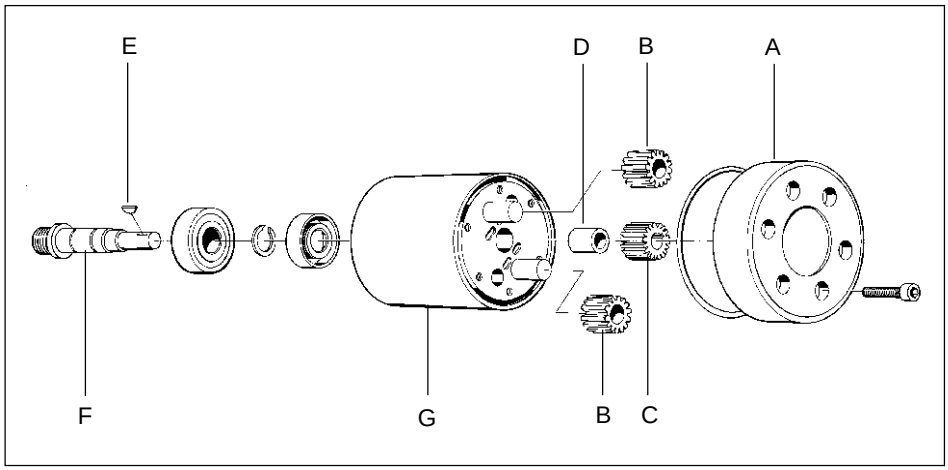
Start with the 4 inner bolts.

Note how the pins on the adapter are placed (half past 1 resp. half past 7).

Lift up the hydraulic pump together with the cover disc from the tank.

Lift up the hydraulic pump together with the cover disc from the tank.

Check that the rubber collar is undamaged and keeps tight. Otherwise fit a new collar.



Unscrew the hose from the hydraulic pump and remove the 6 bolts holding the cover (A).

Remove the cover and both impellers (B).

NOTE!

Note on which axle and in what pump chamber in the cover that resp. impellers are fitted so that these are given the same placement in subsequent assembly.

Remove the gear (C) and bearing sleeve (D).

Remove the axle from the pump housing.

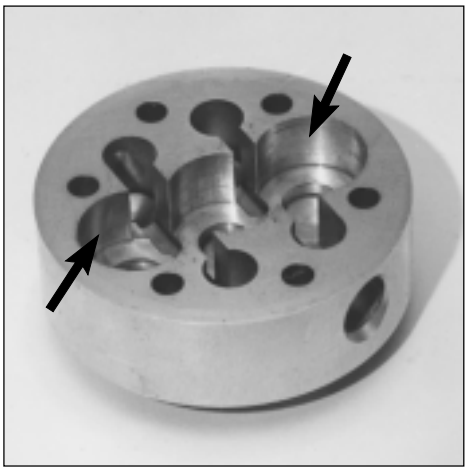
Replace damaged parts and assemble in the reverse order as set out for dismantling.

Remove the key (E) from the pump axle (F).

Heat the pump housing (G) using a hot air gun to approx. 120°C. Now press out the axle with the bearing from the pump housing.

Use a suitable punch and hammer to knock the sealing ring out of the pump housing.

Replace damaged parts and assemble in the reverse order as set out for dismantling.



Check that the pump chambers are free from damage.

If this is not the case, replace both impellers and cover.

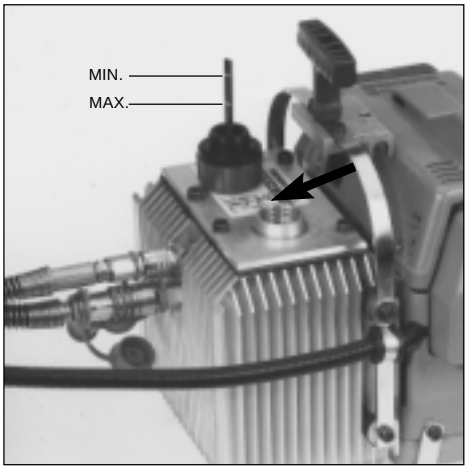
Assemble all remaining parts in the reverse order as set out for dismantling.

Check that the pump chambers in the cover are not scratched. If this is not the case, the cover and both impellers must be replaced.

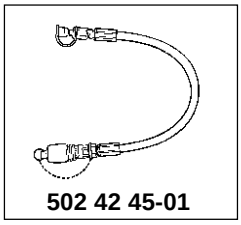
The impellers must not show signs of cracking or other damage. Replace both impellers at the same time if necessary.

Assemble all remaining parts in the reverse order as set out for dismantling.

Make sure all hose connections are tight.



Fill with hydraulic oil to the correct level.



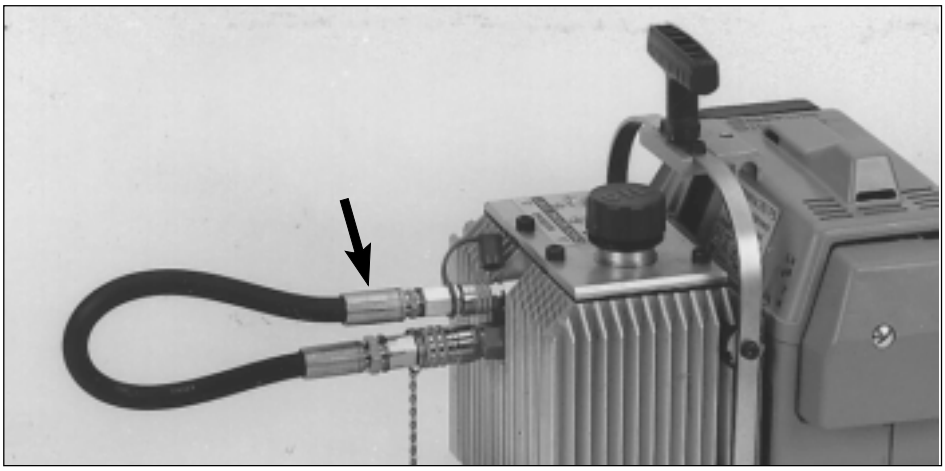
Fill with hydraulic oil to the correct level.

Use oil of the quality ISO VG32 at air temperatures under +20°C and ISO VG45 at air temperatures above +20°C.

NOTE!

The oil's flash point should exceed +160°C. The oil must not be electrically conductive.

Check the oil level when the machine has been run for 2-3 min and fill with more oil so that the level lies between min. and max. on the oil dipstick if necessary.



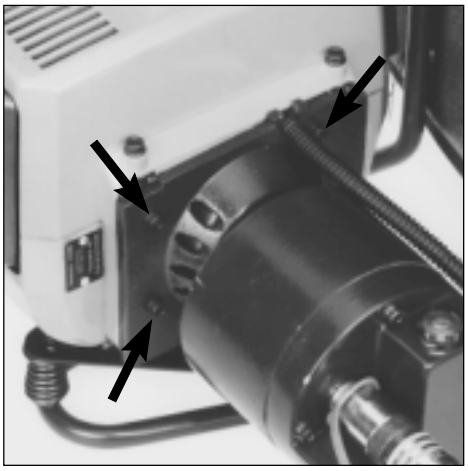
Test running

Fit the test running hose no. 502 42 45-01 on the upper and lower quick couplings.

Make sure the couplings make correctly.

Start the engine and test the pruning saw.

WARNING!
Never start the pruning saw without the hydraulic oil tank and hoses fitted. If the tank is not fitted the couplings can become loose and cause personal injury.



Hydraulic pump

Dismantling, assembling
Model 235P

Remove the bolts and lift off the hydraulic pump.

Drain the hydraulic oil.

Hydraulic pump

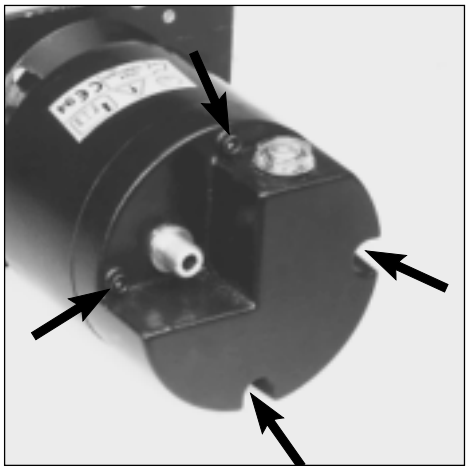
Dismantling, assembling
Model 235P

The hydraulic pump can be lifted off of the engine once the 4 bolts holding the pump on the crankcase have been removed.

Remove the refill plug and drain the hydraulic oil.

Unscrew the quick connector from the hydraulic hose.

Unscrew the quick connector from the hydraulic hose. (21 mm spanner).

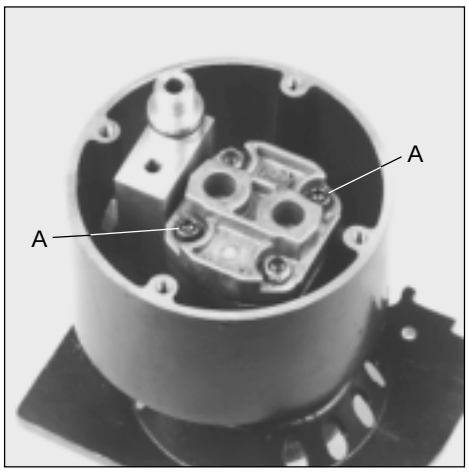


Remove the screws and cover from the hydraulic pump.

Remove the 4 screws holding the cover on the hydraulic pump.

Make sure the pump rests on the engine connection flange and carefully lift off the cover with a rocking action so that any remaining oil does not run out.

Remove the gasket between the cover and tank.

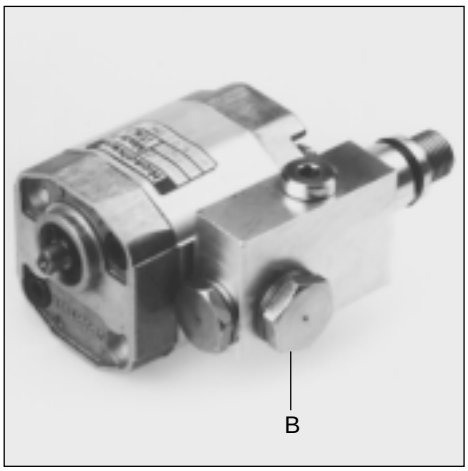


Loosen the screws (A) and lift up the hydraulic pump and control valve.

Loosen the screws (A) and lift up the hydraulic pump and control valve.

NOTE!

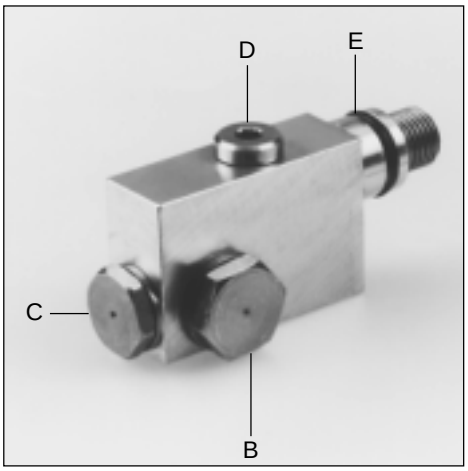
There is a gasket between the pump and tank.



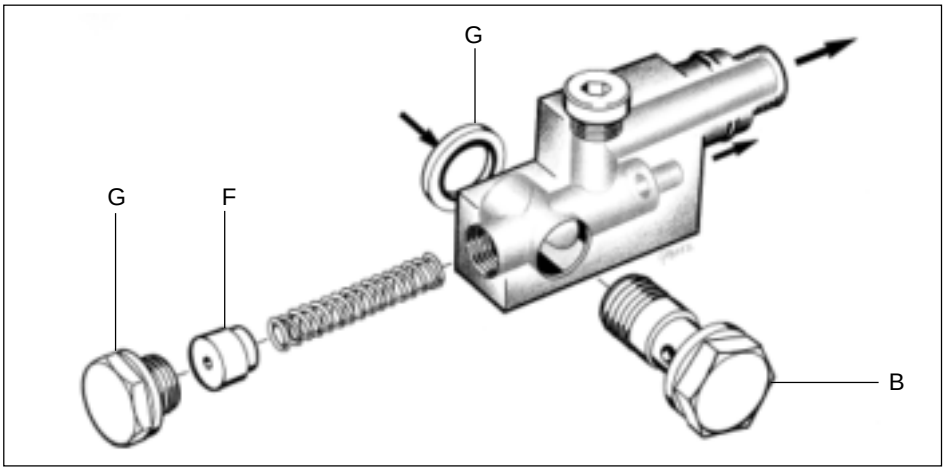
Dismantle the control valve from the pump housing. Note how it is mounted.

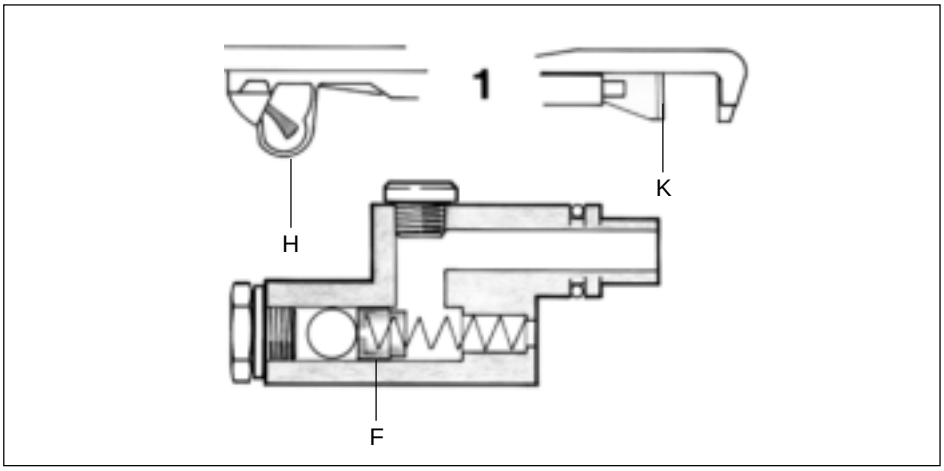
Mark on the pump housing where the control valve was mounted. Also note which way the control valve is facing so it is fitted in the same position when reassembled.

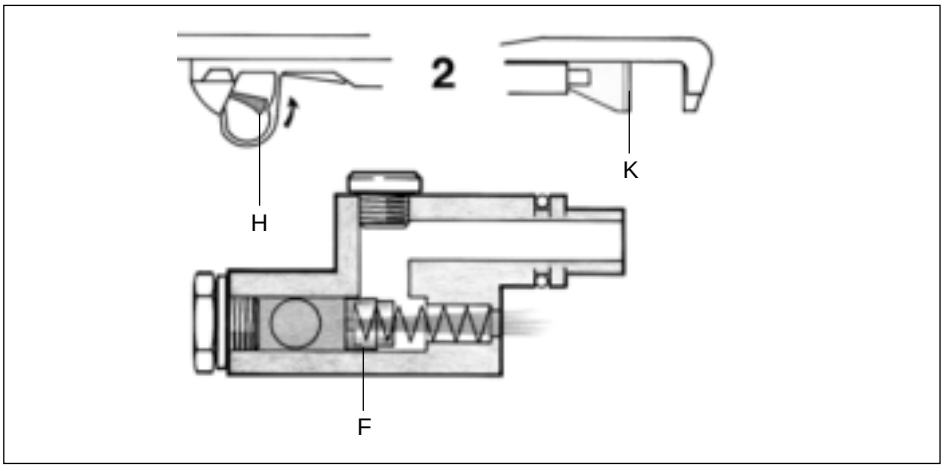
Remove the bolt (B), the control valve and the sealing washer.



Remove the bolt (B), and the plugs (C) and (D) to make it easier to clean the valve block.







Remove the plug (C) and bolt (B).

NOTE!

A piston presses against bolt (B) by means of a spring (see illustration below). Remove the plug (D) as well to make it easier to clean the valve block.

Replace the O-ring (E).

Clean and inspect all components in the valve block and assemble in the reverse order set out for dismantling.

Check the piston (F). If it is scratched or scored it should be replaced with the valve block.

Press in the piston using a small screwdriver when the bolt (B) is fitted.

In the event of wear or damage to the hydraulic pump this must be replaced with a new one. Assemble all components in the reverse order set out for dismantling.

The washers (G) are special hydraulic sealing washers with a V shaped rubber ring as a seal.

It is extremely important that these washers seal correctly.

Control valve operation

Model 235 P

Throttle (H) in the idling position.

No hydraulic oil flows through the control valve.

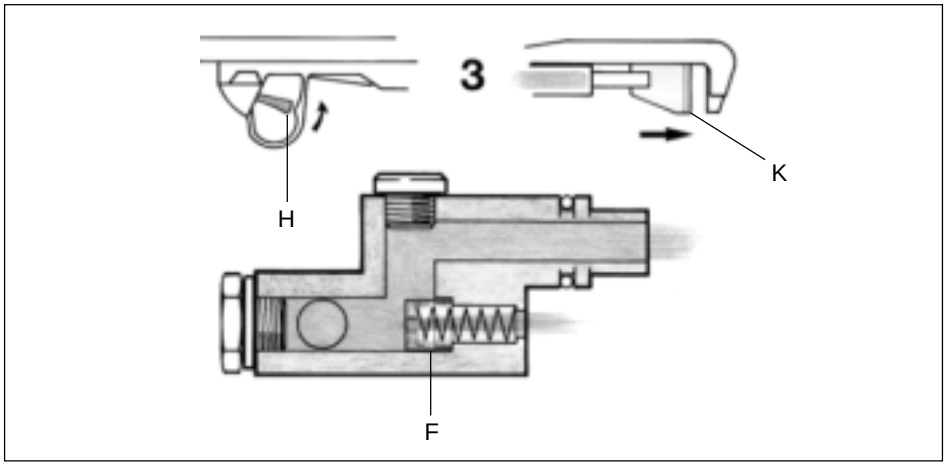
Piston (F) in the rest position.

Pressure blade (K) in the open position.

Throttle (H) at full throttle.

The hydraulic oil flows through the control valve. In the first stage the oil is forced through the overflow hole in the piston (F) which starts to move once the spring pressure is counteracted.

Pressure blade (K) in the open position.



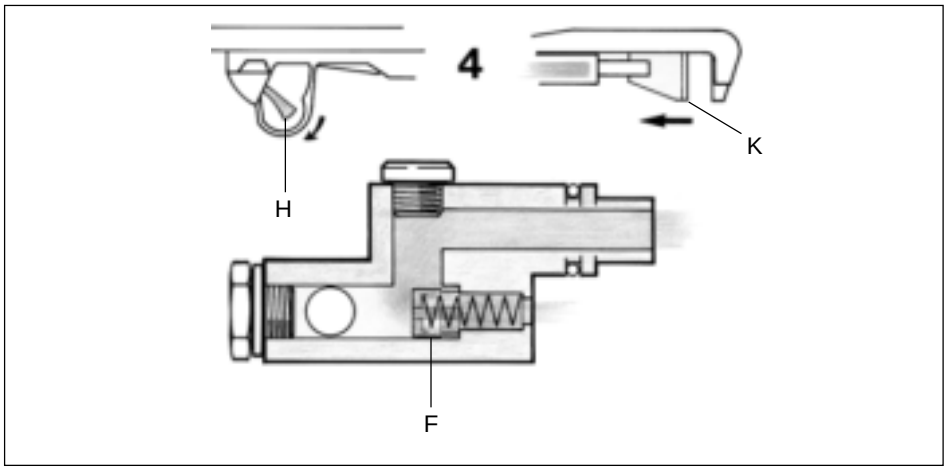
Throttle (H) at full throttle.

Full hydraulic oil flow through the control valve.

Piston (F) is forced back completely by the oil pressure.

The outlet channel to the pressure blade is fully open.

The pressure blade (K) is rapidly forced towards its stop.



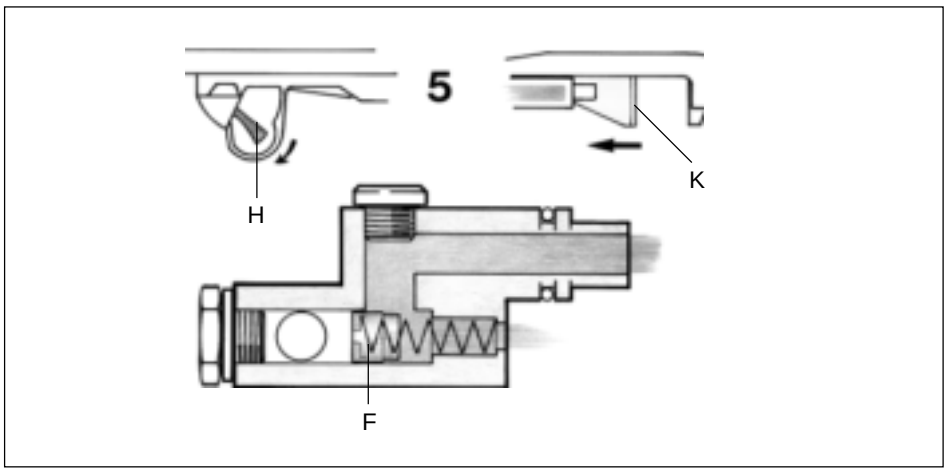
The throttle (H) is released and returns to the idling position.

The hydraulic oil flow from the pump ceases.

The oil pressure in the hose to the pressure blade reduces immediately.

The oil flow returns through the hose and passes through the overflow hole in the piston (F).

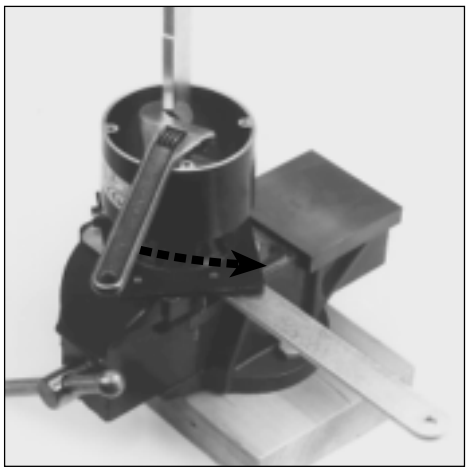
The pressure blade (K) is pulled quickly to the open position by the integrated spring.



The throttle (H) in the idling position.

The piston (F) is pressed back by the spring, and the oil channel for the pressure blade is fully open. Oil in the hose flows quickly back into the pump housing.

Pressure blade (K) in fully open position.

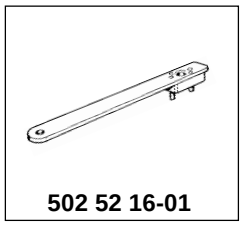


Replacing the clutch drum and bearing

Model 235P

Dismantle the hydraulic pump and control valve.

Lock the clutch drum and loosen the pump drive screw.



502 52 16-01

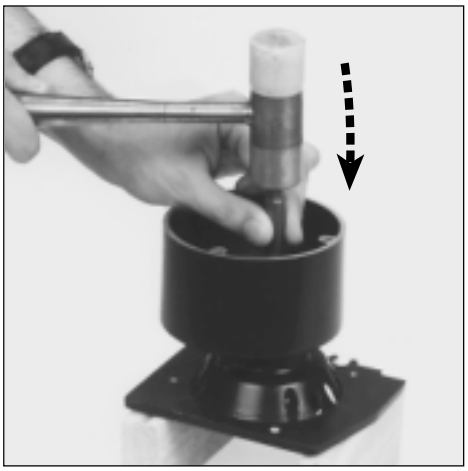
Replacing the clutch drum and bearing

Model 235P

Dismantle the hydraulic pump and control valve as described above.

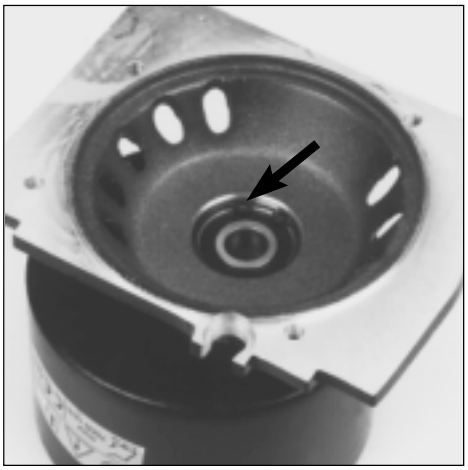
Lock the clutch drum using tool no. 502 52 16-01 in a vice.

Loosen the pump drive screw using a large screwdriver or suitable flat bar.



Press out the clutch drum.

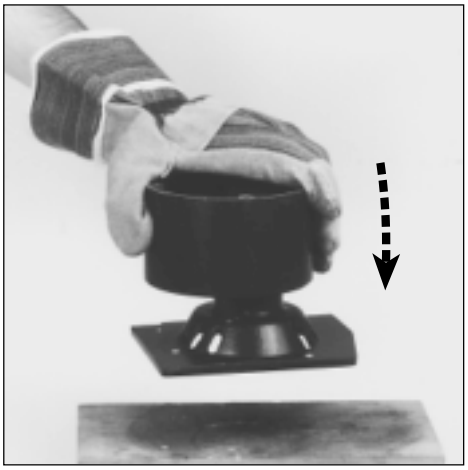
Press out the clutch drum from the bearing using a suitable punch.



Remove the circlip and heat the pump housing.

Remove the circlip using circlip pliers.

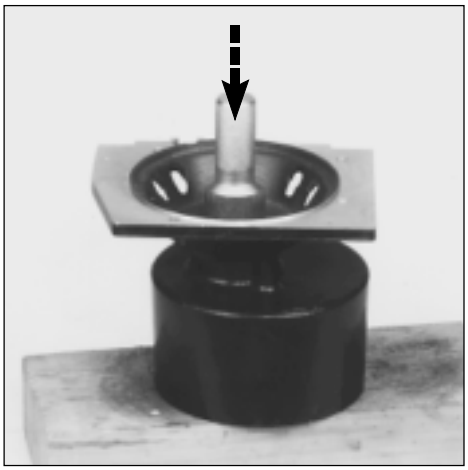
Heat the pump housing using a hot air gun to approx. 150°C.



Dismantle the bearing.

Knock the pump housing against a wooden block so the bearing falls out.

Alternatively, press out the bearing using a punch and hammer.

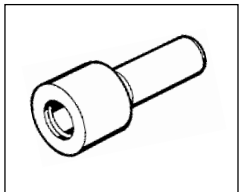


Fit a new bearing.

Fit the circlip and other components.

Position the new bearing making sure it sits correctly in its seating. Use punch 504 91 28-06.

Fit the circlip and other components in the reverse order set out for dismantling.

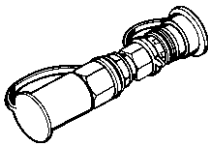


504 91 28-06

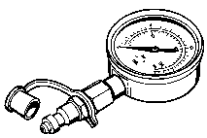
NOTE!

Do not forget to fill with new hydraulic oil until the level is visible in the refill hole.

Use an oil of the quality ISO VG 32 at an air temperature under +20°C and ISO VG 45 at an air temperature over +20°C.



502 52 30-01



502 52 28-01

Capacity test

Model 235P

Test run the unit under varying loads for about 5 minutes so the oil becomes warm.

Connect the adapter and pressure gauge.

Check the oil pressure. It should be min. 90 bar (9 MPa).

Capacity test

Model 235P

The capacity of the hydraulic pump is tested as follows:

Test run the unit with the pruner attachment with varying loads for about 5 minutes so the oil becomes warm.

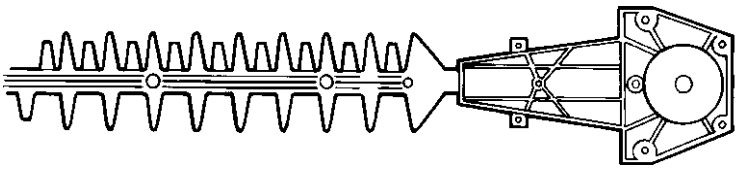
Now fit adapter 502 52 30-01 and pressure gauge 502 52 28-01.

Check the oil pressure under load. It should be min. 90 bar (9 MPa).

If the pressure is lower, this can be due to leakage or internal pump wear. If this is the case replace the pump.

Attachments

9.

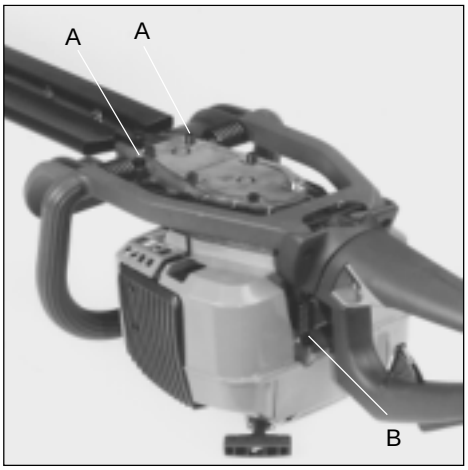


Contents

A brush cutter has proven to be very suitable for use as a power source for many other applications. By fitting it with different types of adapters it's possible to connect different types of attachments. These attachments are carefully tested together with the engine and their specifications must not be modified so that safety and their service life are not jeopardised.

The same care and exactness apply to these attachments as apply to the engine when servicing. For the hydraulic powered attachments cleanliness has an even greater significance than when servicing the engine. The smallest impurities entering the hydraulic system can result in downtime. Defective and leaking hoses and couplings should be replaced immediately with new ones.

Pay special attention to the high oil pressure in a hydraulic system, which can cause personal injury in the event of sudden leakage from a hose or coupling.



Hedge trimmer

Models 225 H60/H75

Dismantling the gearbox

Separate the engine and the cutting equipment.

Hedge trimmer

Models 225 H60/H75

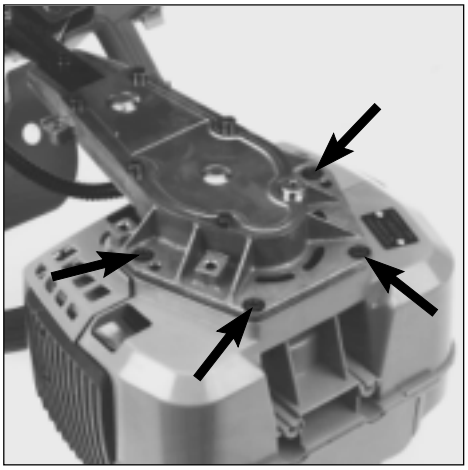
Dismantling the gearbox

Separate the engine and the cutting equipment as follows:

Remove the 4 bolts (A) and (B) by the vibration dampers.

WARNING!

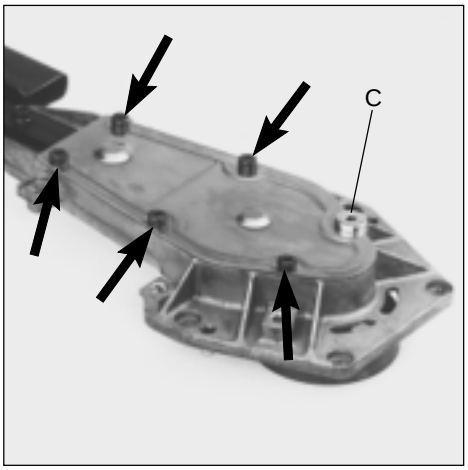
The transport guard should always be fitted when working on the cutting equipment to avoid cutting your hands.



Dismantle the cutting equipment from the engine.

Remove the bolts holding the clutch cover on the crankcase.

Lift off the clutch cover complete with the cutting equipment.



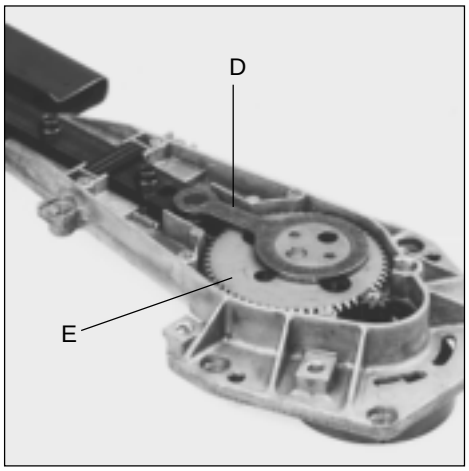
Remove the bolts and the grease refill plug.

Lift off the cover.

Remove the 5 socket headed bolts and the grease filling plug (C).

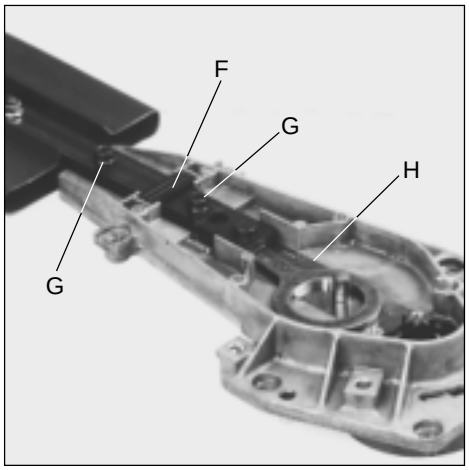
Later designs have a further 2 bolts to reinforce the cover.

Lift off the cover over the gearbox.



Lift out the connecting rod and the gear wheel.

Lift out the connecting rod (D) and the gear wheel (E).

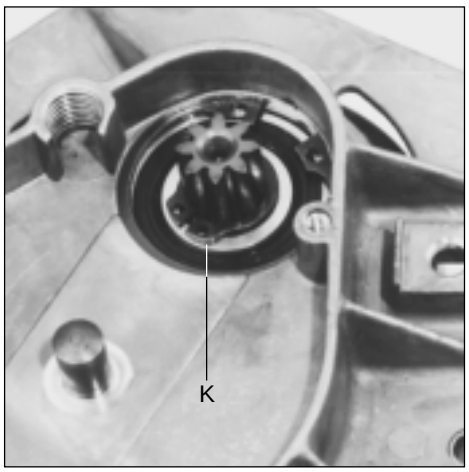


Remove the blades, connecting rod and protective plate.

Remove the seal (F) and both bolts (G) that hold the cutting equipment on the gearbox.

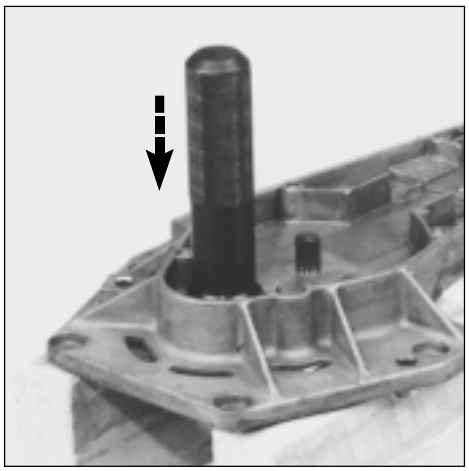
Remove the blades, connecting rod and protective plate (H).

Note which way the protective plate faces so it can be reassembled in the same way.



Dismantle the clutch drum.

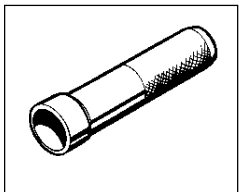
Remove the circlip (K) and press out the clutch drum using a punch and hammer.



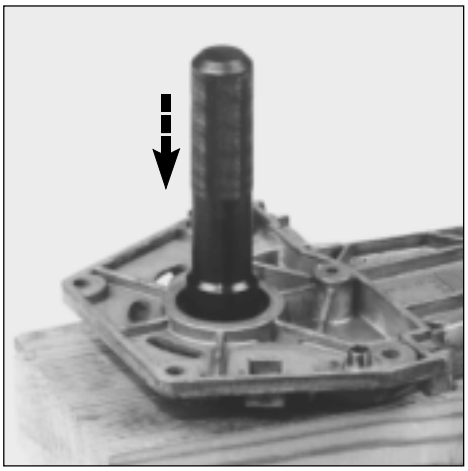
Dismantle the bearing.

Heat the gearbox to about 150°C by using a hot air gun and dismantle the bearing using punch no. 505 38 17-09.

Do not remove the circlip.

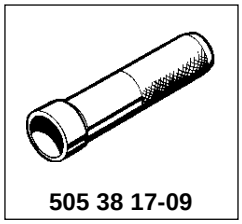


505 38 17-09



Assembling the gearbox

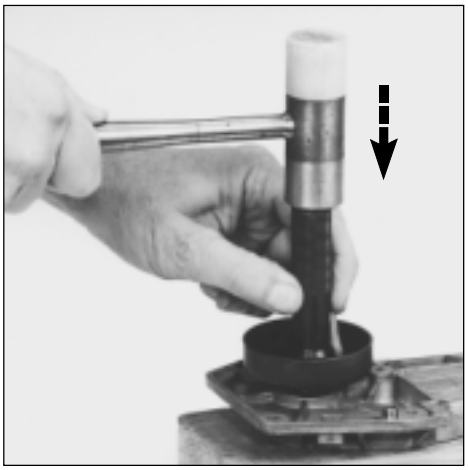
Heat the gearbox and fit the bearing against the circlip.



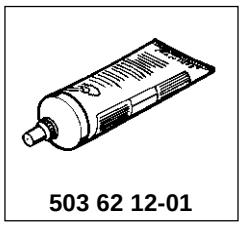
505 38 17-09

Assembling the gearbox

Heat the gearbox to about 150°C by using a hot air gun and position the bearing. Use punch no. 505 38 17-09 to press the bearing against the circlip.



Fit the clutch drum and the remaining components in the reverse order set out for dismantling.



503 62 12-01

Fit the clutch drum while the bearing is still warm.

Fit the circlip and the remaining components in the reverse order set out for dismantling.

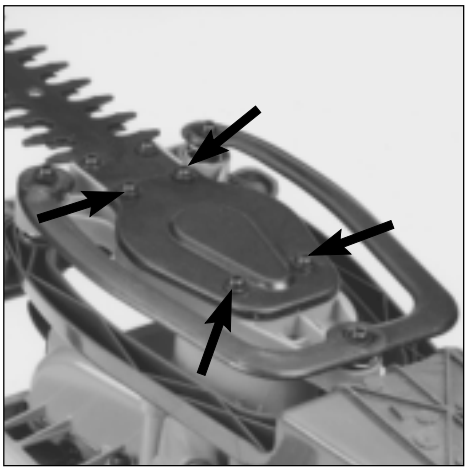
NOTE!

Fit the gear wheel with bevelled edge facing upwards.

The X punched on the connecting rods should face each other.

Tighten the bolts for the blades so they butt against the spacer.

Do not forget to fill the gearbox with grease.

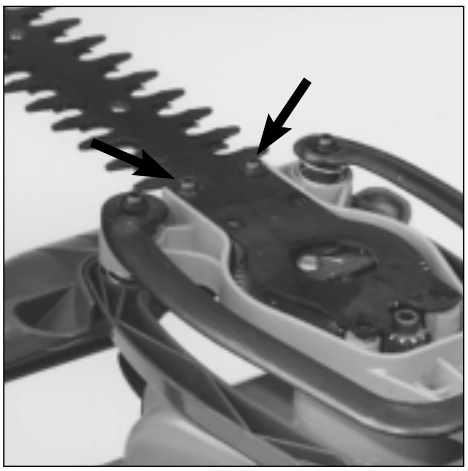


Hedge trimmer
Model 18H

Remove the cover over the gearbox.

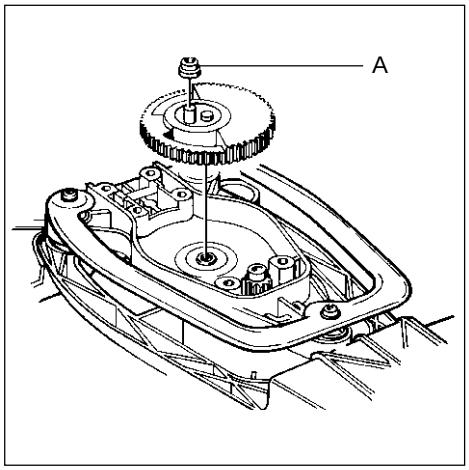
Hedge trimmer
Model 18H

Remove the 4 screws and lift off the cover over the gearbox.



Remove the cutting equipment.

Unscrew the 2 bolts and lift off the cutting equipment.

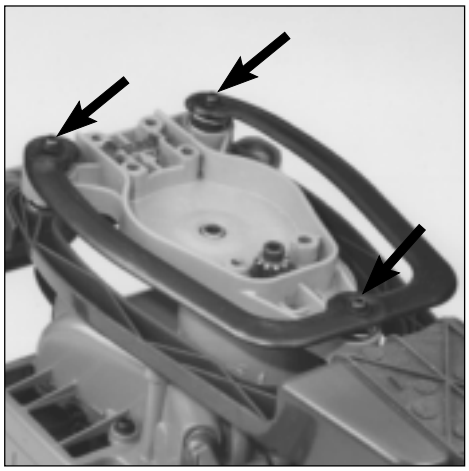


Lift off the gear.

Lift off the gear.

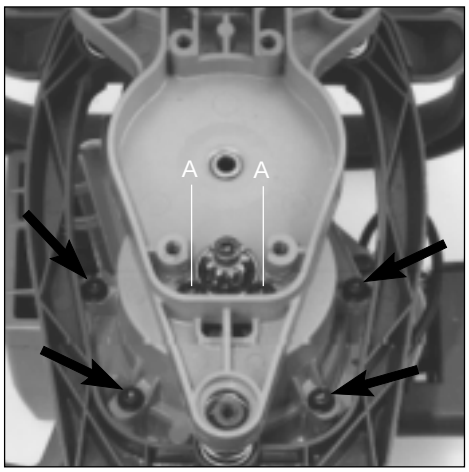
NOTE!

Do not lose the small bearing sleeve (A).



Dismantle the steel loop and springs.

Remove the 3 screws and lift off the steel loop together with the springs.

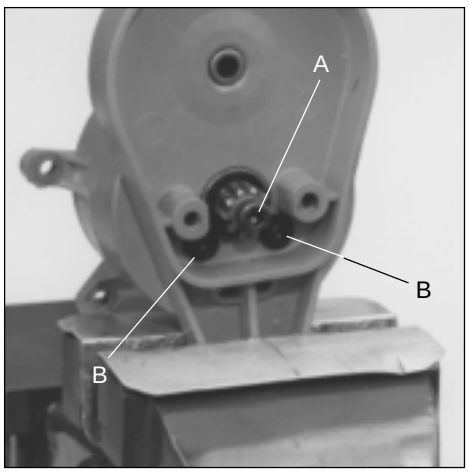


Dismantle the clutch housing.

Unscrew the 4 bolts and lift off the gear-box.

NOTE!

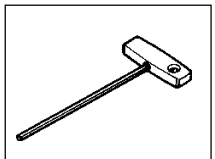
The bolts (A) do not need to be removed.



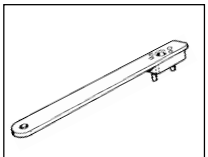
Dismantle the clutch drum and the bolts (B).

Dismantle the clutch drum. Loosen (anti-clockwise) the axle (A) using the allen key 502 50 57-01 (3/16") and possibly tool no. 502 52 16-01.

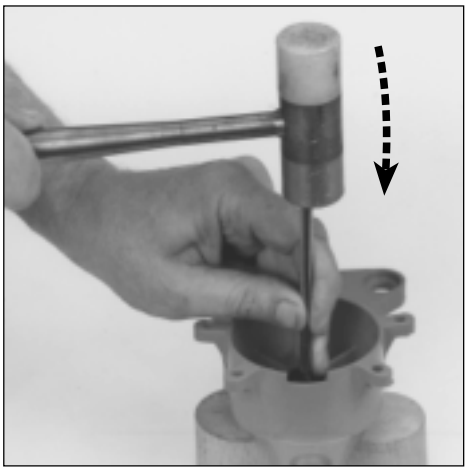
Remove the bolts (B).



502 50 57-01



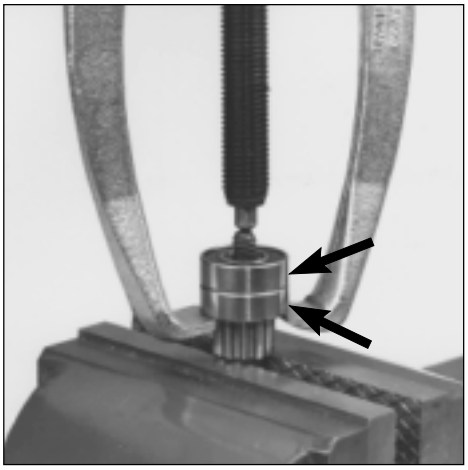
502 52 16-01



Press out the gear with the bearing from the gearbox.

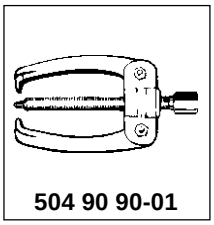
Press out the gear with the bearing from the gearbox.

Use a suitable punch and hammer.



Pull the bearing off of the clutch axle.

Pull off both bearings at the same time from the clutch axle by using a small puller, e.g. no. 504 90 90-01.



504 90 90-01

Assembly

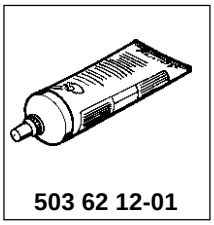
Fit a new bearing on the clutch axle. Lubricate with grease.

Assembly

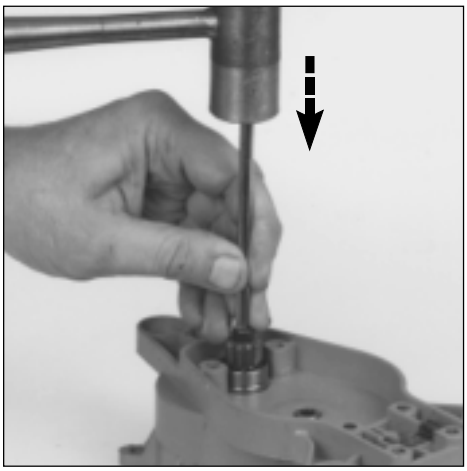
Fit a new bearing on the clutch axle.

NOTE!

Lubricate the bearings with grease and fit them on the axle so that the bearings' open faces are opposite each other.

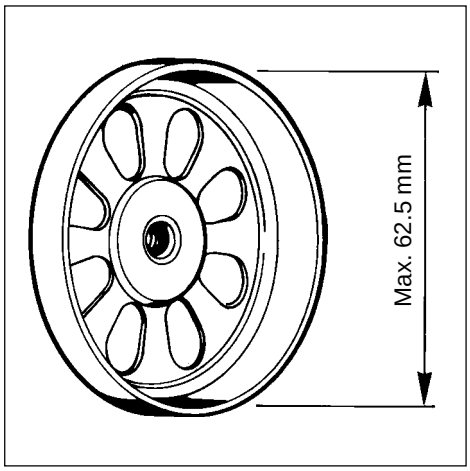


503 62 12-01

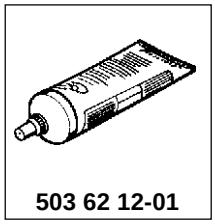


Fit the bearing together with the clutch axle in the gearbox.

Press in the bearings together with the clutch axle into the gearbox by using a suitable punch and hammer. Tighten both screws that prevent the bearings from sliding out of their seatings.



Check the wear on the clutch drum before assembling. The diameter must not exceed 62.5 mm.

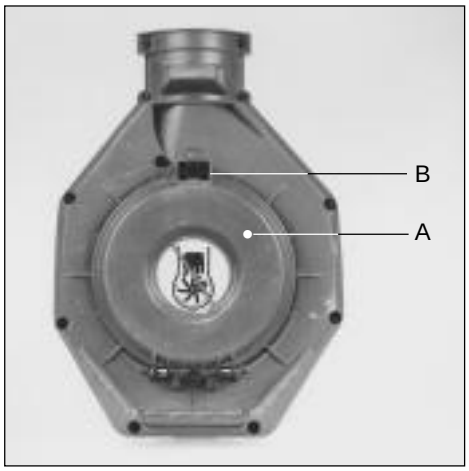


503 62 12-01

Check the wear on the clutch drum before assembling. The diameter must not exceed 62.5 mm.

Fit the clutch drum on the axle and assemble the remaining parts in the reverse order as set out for dismantling.

Do not forget to grease the gear.



Blower

Model 225HBV

Fold up the cover (A) if the fan and fan housing are to be cleaned.

When replacing the impeller the fan housing is split once the 11 screws have been removed.

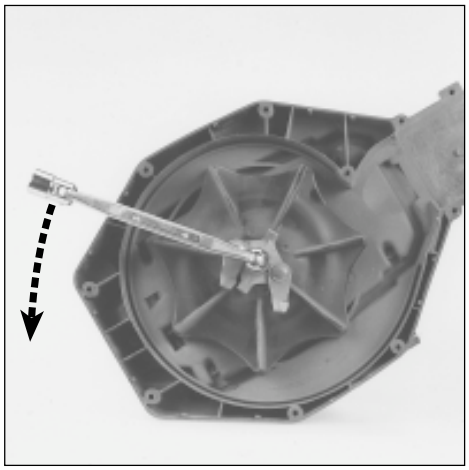
Blower

Model 225HBV

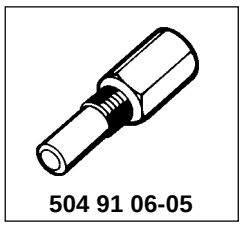
The blower unit consists of a radial fan that rotates in a fan housing.

To just clean, fold up the cover (A). Slide a screwdriver in at (B) to move the locking spring.

If the impeller is to be replaced the 11 bolts and fan housing cover must be removed.



Replace the impeller if it is damaged. Otherwise the risk of damage due to vibration is great.



504 91 06-05

Replace the impeller if one or more of the fan blades are damaged.

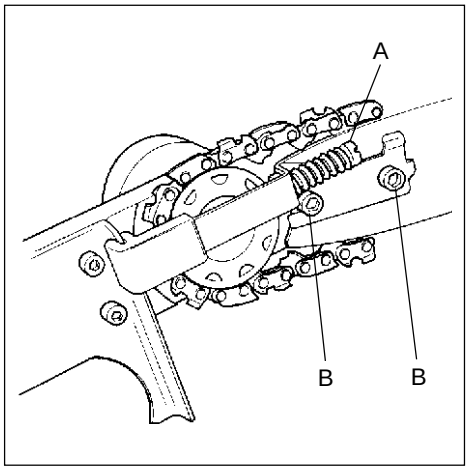
Replace the spark plug with piston stop no. 504 91 06-05.

Remove the nut (anticlockwise) and lift off the impact blades that disintegrate the garden waste when the vacuum device is fitted. Remove the impeller.

Assemble in the reverse order as set out for dismantling.

NOTE!

The sheet rail at the periphery of the air shell should be positioned so that the bevelled corners face outwards.



Pruning saw

Model 250PS

Dismantling

Remove the guard over the drive sprocket.

Loosen the chain adjuster screw (A) and remove the bolts (B).

Pruning saw

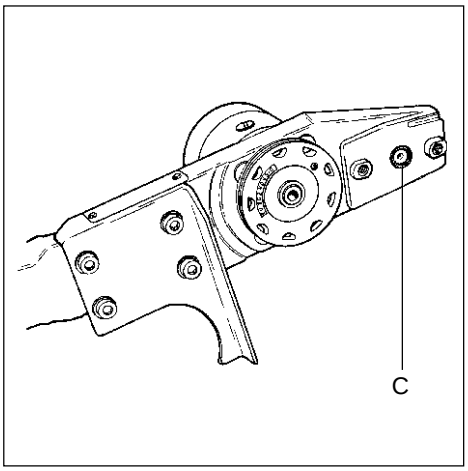
Model 250PS

Dismantling

The cutting equipment consists of a chain, bar and hydraulic motor.

Remove the 2 bolts holding the guard over the drive sprocket and loosen the chain adjuster screw (A).

Remove the bolts (B).



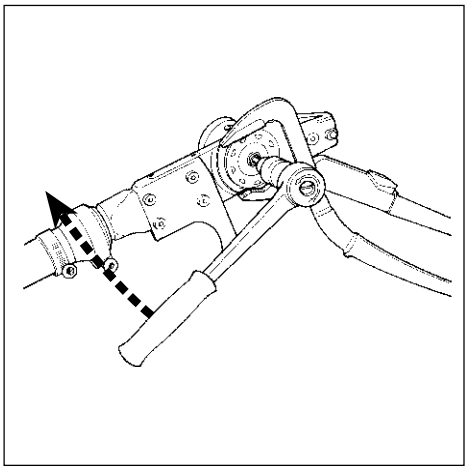
Dismantle the chain adjuster, chain and bar.

Lift off the chain adjuster, chain and bar.

NOTE!

Do not lose the small O-ring (B) that lies behind the bar.

Exercise care so that the gasket that lies inside the chain adjuster is not damaged.



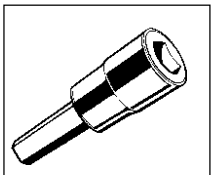
Dismantle the drive sprocket from the hydraulic motor.

Dismantle the drive sprocket from the hydraulic motor.

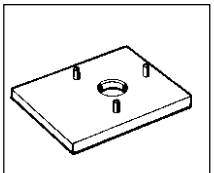
Hold the sprocket by using a pipe wrench and turn the hydraulic motor's axle clockwise using the allen key no. 502 52 13-01.

Tip!

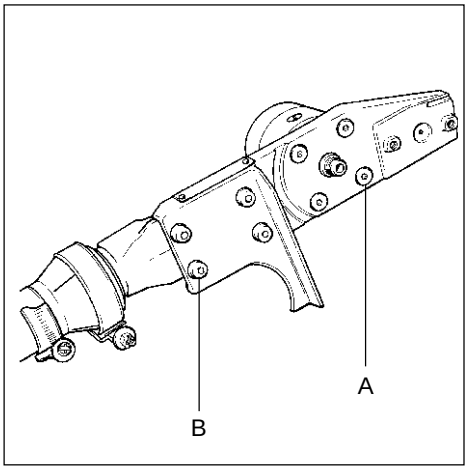
The drive sprocket can be extremely tight and thereby difficult to hold with a pipe wrench. If so, use holding tool no. 502 52 23-01.



502 52 13-01

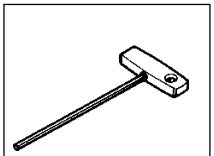


502 52 23-01

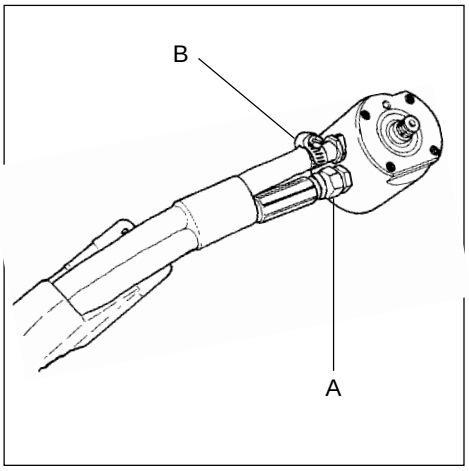


Dismantle the hydraulic motor and bar mounting.

Remove the 4 bolts (A) holding the hydraulic motor and the 4 bolts (B) holding the bar mounting against the ball joint bracket.



504 90 00-02



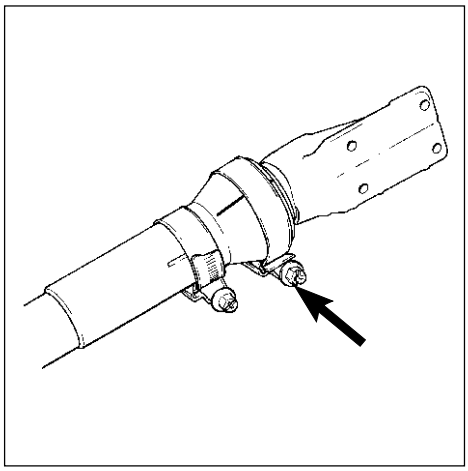
Loosen the hoses to the hydraulic motor and pull off the rubber sleeve holding the hoses together.

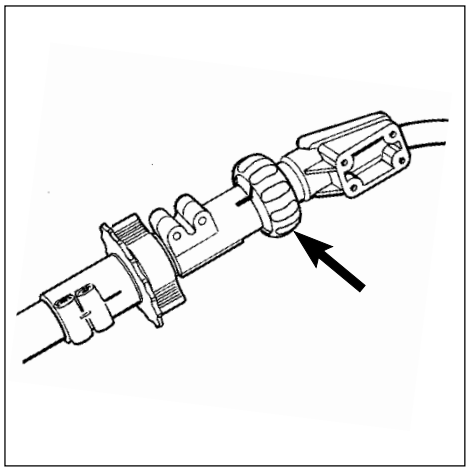
Loosen the hoses from the hydraulic motor.

Pressure hose = hose coupling (A).

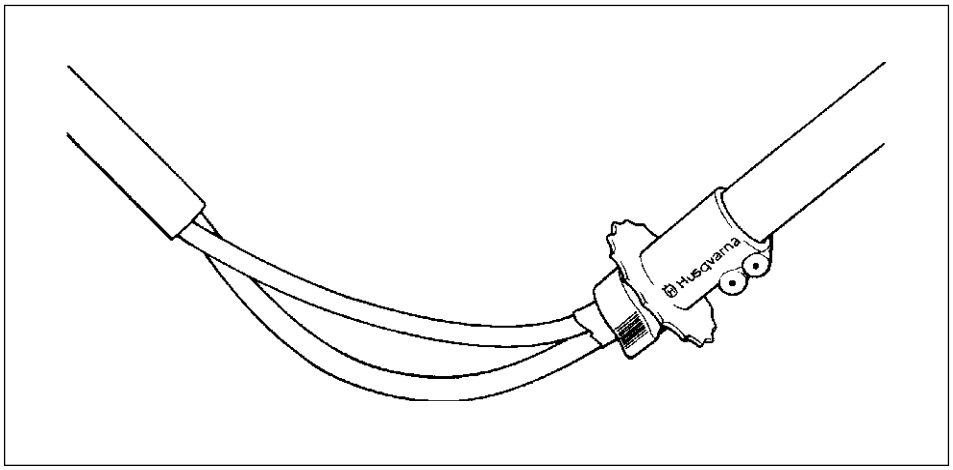
Return hose = hose clip (B).

Pull off the rubber sleeve holding the hoses together.





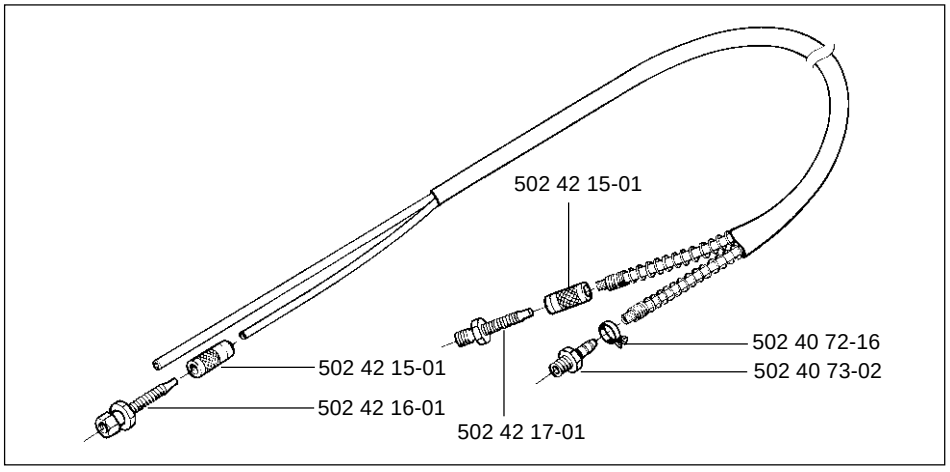
Dismantle the ball joint for replacement if necessary by removing the screw clip or the fluted ring nut (newer models).



Pull apart the handle tube so that one hose at a time can be pulled through the first tube. Start with the return hose.

Take off the handle lock if necessary.

Now pull the hoses through the remaining handle tubes.



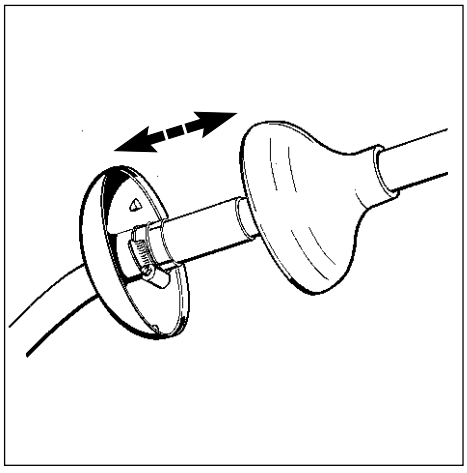
If the hydraulic hose has ruptured or is likely to rupture close to a hose coupling it can be saved if cut square where ruptured and fitted with a special repair hose coupling.

Screw the outer, left-hand threaded sleeve of the house coupling on the hydraulic hose as far as possible. Possibly lubricate with oil and grease.

NOTE!

The black outer casing must not be creased.

Now screw on the inner, right-hand threaded part of the hose coupling in the outer part.



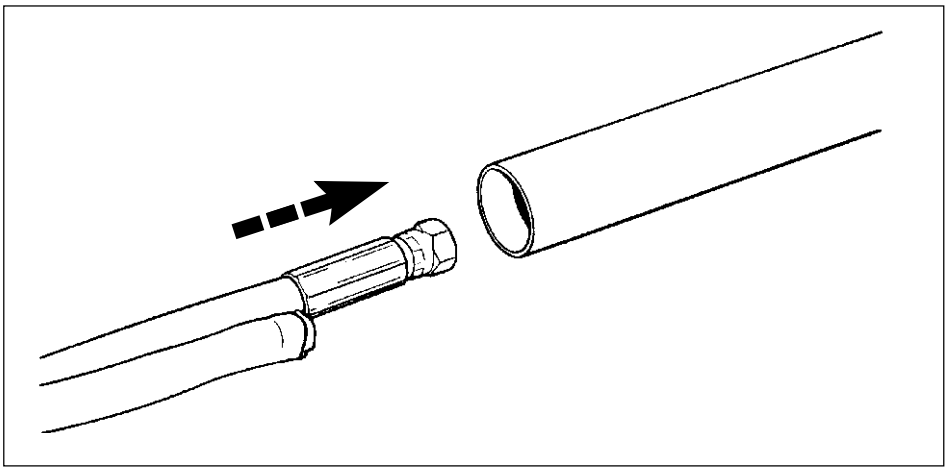
Replace the hose guide cover if it is damaged.

Separate the halves using a screwdriver, loosen the hose clip and pull off the cover.

The hose guide cover on the lowest handle tube can easily be replaced if damaged.

Insert a screwdriver in the cut-out in the joint between both cover halves and twist apart.

Loosen the hose clip and pull off the cover.



Assembly

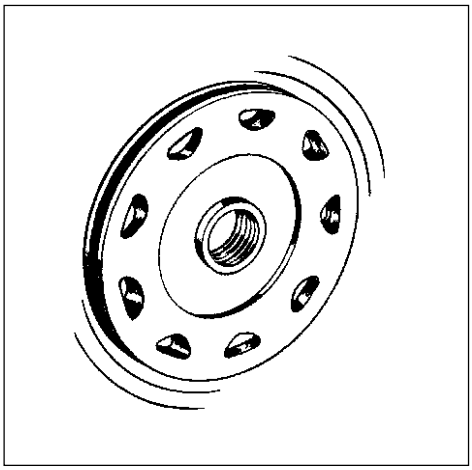
Assemble the hoses in the reverse order as set out for dismantling.

Slide both hoses through the handle tube simultaneously.

Assembly is simplified if the hoses are powdered and the pressure hose is placed a little before the return hose.

NOTE!

When the ball-joint is fitted the locking pin on the screw clamp should fit in the hole on the ball-joint.



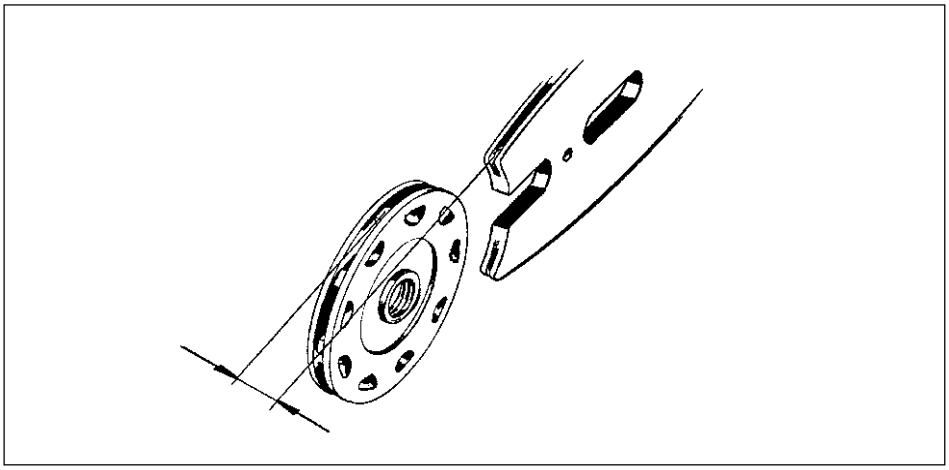
Chain sprocket and bar

Check that the chain sprocket rotates centrically. If this is not the case the sprocket should be replaced with a new one.

Chain sprocket and bar

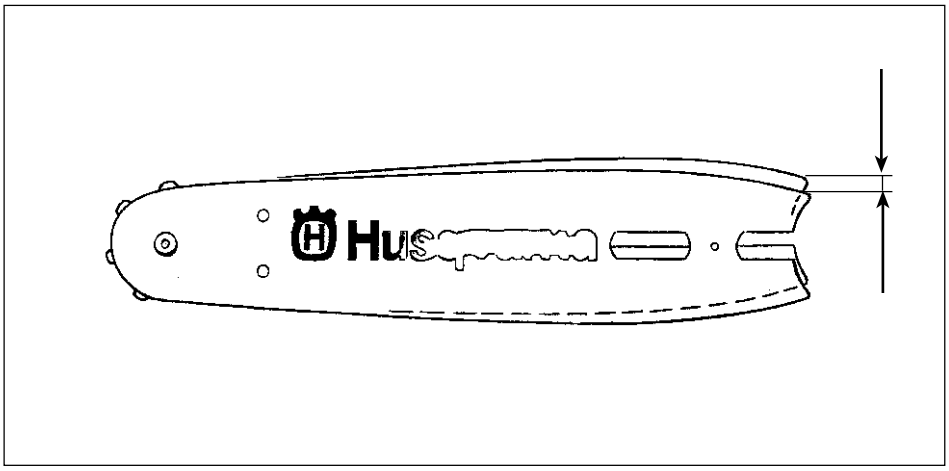
Check that the chain sprocket rotates centrically, i.e. the chain's tension is the same during its entire rotation.

If this is not the case the chain sprocket should be replaced with a new one.

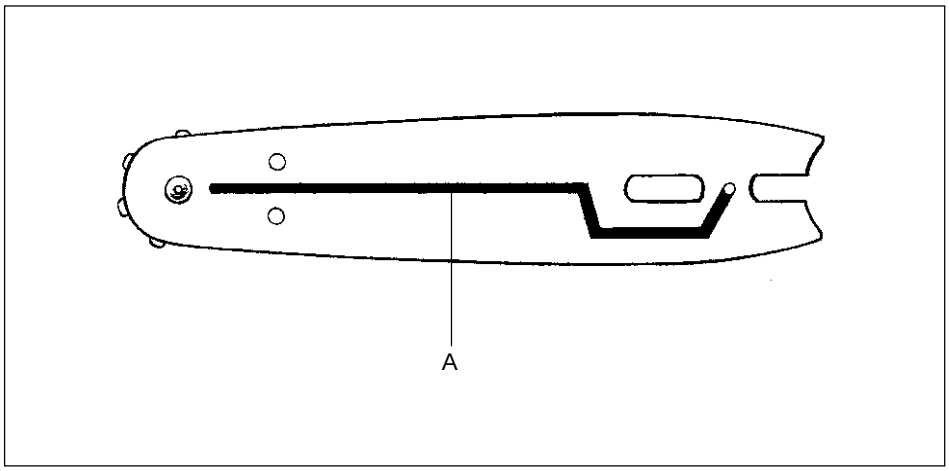


Check that the chain groove in the bar and gear are in line. If this is not the case the wear on the sprocket, chain and bar will be abnormally large and the service life short.

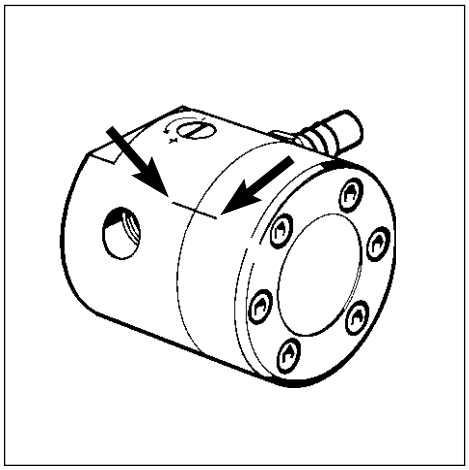
Replace the bar mounting and/or the chain sprocket to rectify the fault.



Check that the bar's guides are on the same level. If this is not the case the saw cut will be askew and wear on the chain uneven. If so, replace the bar and chain.



Blow out the oil channel (A) in the bar with compressed air to ensure the nose wheel and chain receive sufficient lubrication.



Hydraulic motor

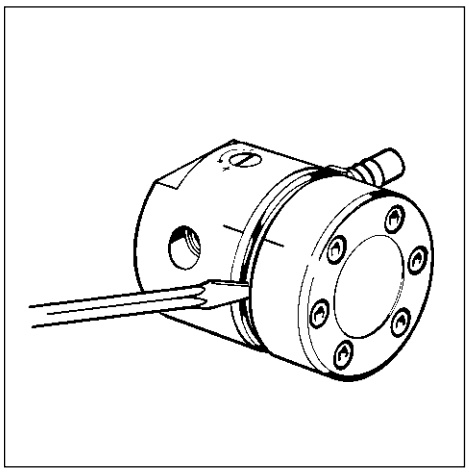
Dismantling

Observe the greatest degree of cleanliness when dismantling and assembling the hydraulic motor. The smallest impurities can cause downtime.

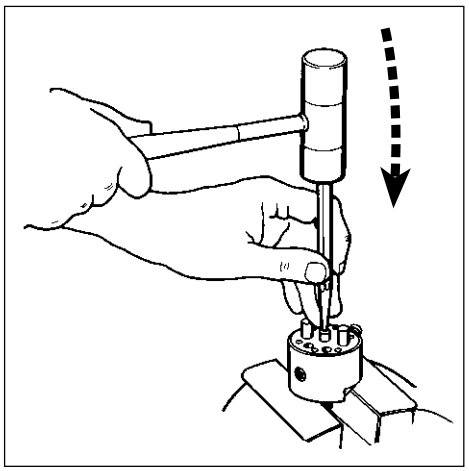
NOTE!

To obtain the maximum motor power it is important that the cover and gear are in the same position after servicing as before.

1. Make a mark on the motor housing and cover.



2. Remove the screws and separate the cover from the motor housing.



3. Remove the gear and key.
4. Dismantle the pump axle and its bearing.
5. Dismantle the sealing ring.

Hydraulic motor

Dismantling

Observe the greatest degree of cleanliness when dismantling and assembling the hydraulic motor. The smallest impurities can cause downtime.

NOTE!

To obtain the maximum motor power it is important that the cover and gear are in the same position after servicing as before.

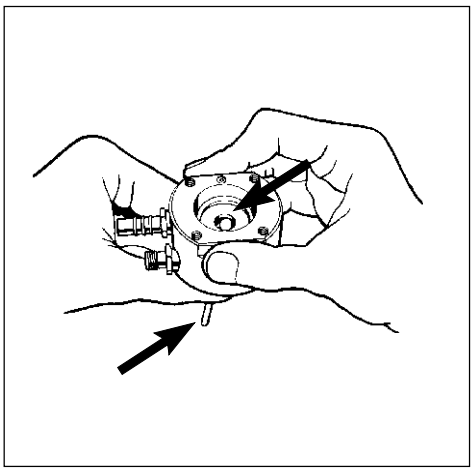
1. Make a mark across the joint between the motor housing and cover so that the parts have the same relative positions after servicing.
2. Remove the six screws holding the cover.

   Carefully press apart the cover and motor housing using a screwdriver.

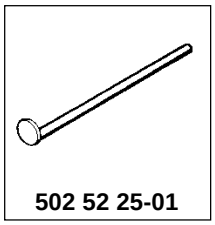
NOTE!

Move the impeller over to the cover by means of a screwdriver. Make sure the gears keep their relative positions.

3. Remove the gear and key.
4. Press out the axle and bearing from the pump housing using a brass punch or similar material that is softer than the axle.
5. Dismantle the sealing ring.



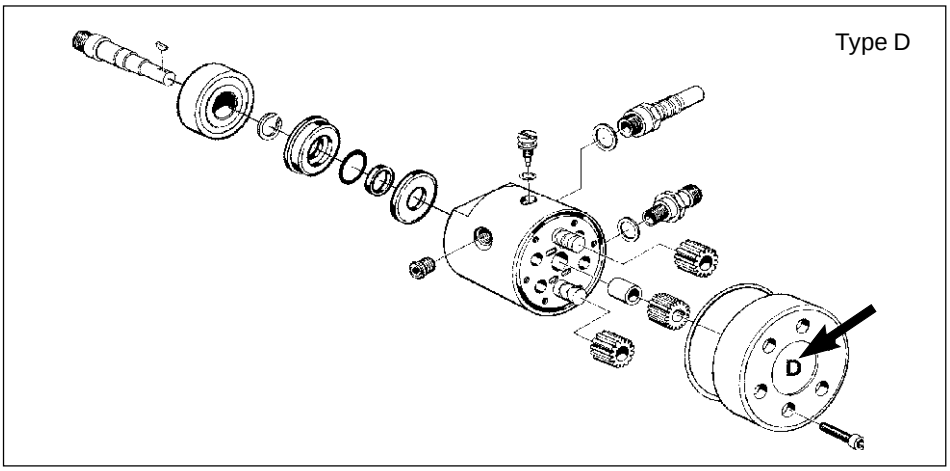
6. Dismantle the cover plate in the bottom of the bearing seating.



502 52 25-01

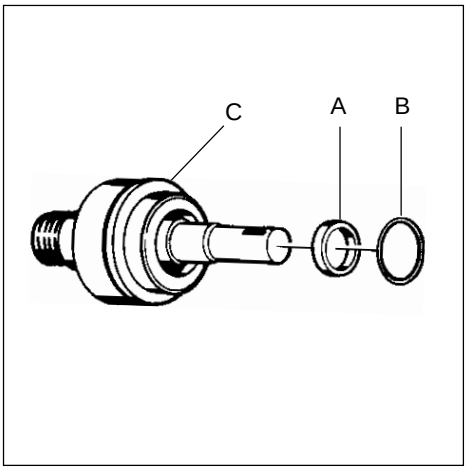
6. Remove the cover plate positioned in the bottom of the bearing seating using punch no. 502 52 25-01.

   Insert the punch through the axle hole from the bearing side and place the washer on the punch under the cover plate. Knock the punch against the bench. Move the punch around the cover plate to prevent the washer from turning and jamming in the bearing seating when dismantled.



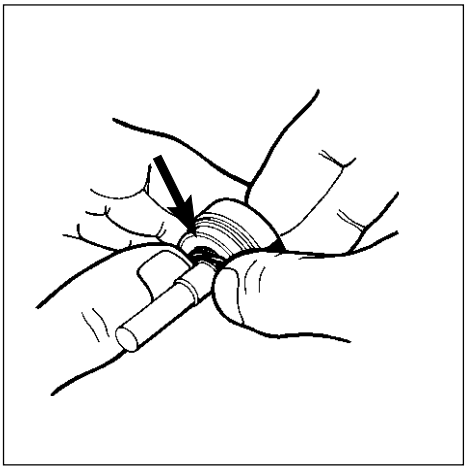
Assembly

In order to also use the hydraulic motor together with an external hydraulic system, the axle seal on motors marked with a “D" on the cover have a hydraulic seal instead of the conventional axle seal to withstand a higher return line pressure that can be up to 40 bar in many cases. This modification was introduced into production from the middle of 1995 (see the serial number plate on the pruning saw).



1. Place the seal retainer on the axle with the flange facing the bearing.

1. Place the seal retainer (C) on the axle with the flange facing the bearing.

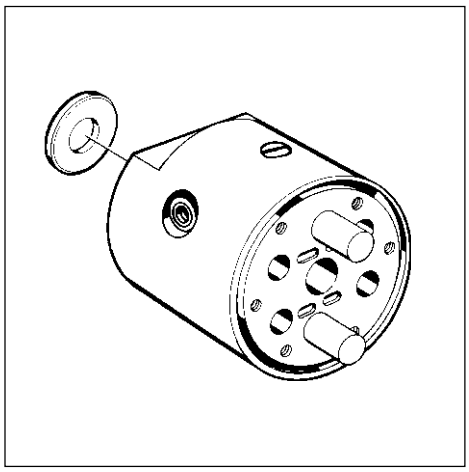


2. Slide the sealing ring (A) into position.
3. Press down the O-ring (B) correctly in the gap between the sealing ring and the seal retainer.

2. Lubricate the axle with a few drops of oil and slide the sealing ring (A) carefully over the axle's sealing surface.
3. Press down the O-ring (B) between the sealing ring and the seal retainer. Use your thumb nail!

NOTE!

Check that the O-ring sits correctly in the gap between the sealing ring and retainer.

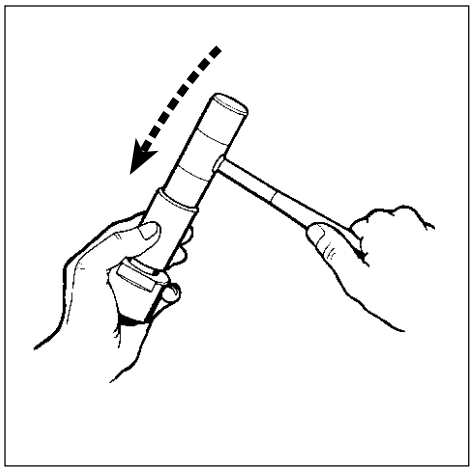


4. Place the cover plate, with the chamfer facing inwards, in position on the motor housing.

4. Place the cover plate in position in the motor housing. The chamfer should face inwards to facilitate assembly.

NOTE!

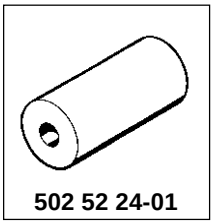
Motors manufactured before the middle of 1995 (no "D" marking on the cover) have a metal disc placed on the outside of the sealing ring. This disc must not be fitted when the above mentioned seal type is used.



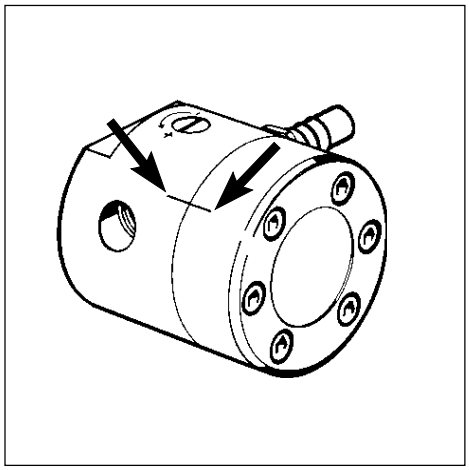
5. Fit the axle with the bearing fitted in the motor housing.

   Check that the axle can rotate freely.

5. Press in the axle with the bearing fitted in the motor housing. Hold the housing in your hand and press in the bearing using sleeve no. 502 52 24-01. Check that the axle can rotate freely.

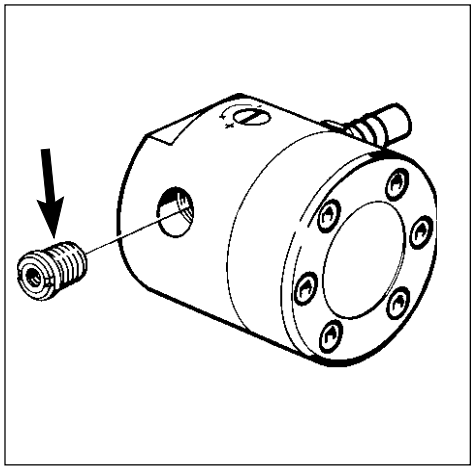


502 52 24-01



6. Check that the O-ring is undamaged and fit the key in the axle. Place the gear and pump impeller in position in the cover and secure it in place on the motor housing.

6. Check that the O-ring, which seals between the cover and the motor housing, is undamaged.
   Fit the key on the axle.
   Place the gear and impeller in position in the cover so that they come in the same position relative to each other as before servicing.
   Fit the cover on the motor housing. Rotate the axle so that the key enters the gear.
   Make sure the marking on the cover aligns with the mark on the motor housing.
   Tighten the screws crosswise and diagonally.



In connection with the introduction of the hydraulic seal type “D” the relief valve must be replaced with one that has a higher opening pressure.

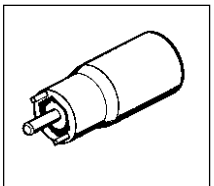
This valve has order no. 503 83 17-01.

Use tool no. 502 42 50-01 to replace the valve.

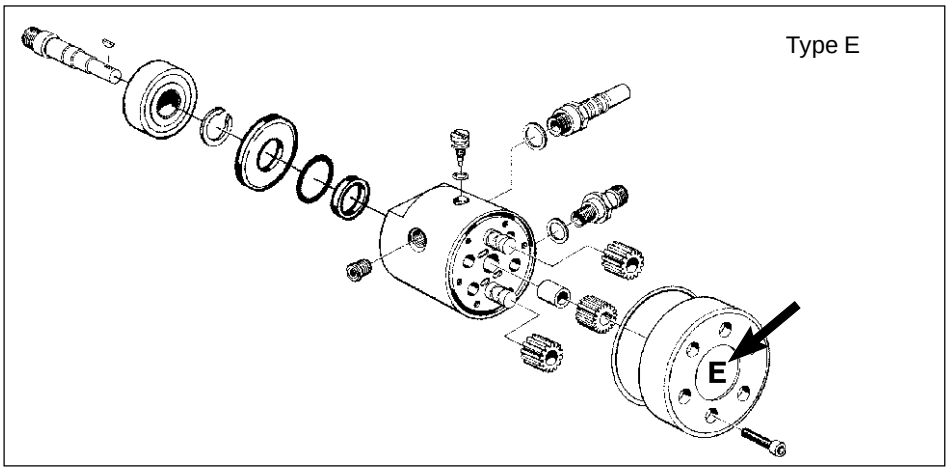
In connection with the introduction of the hydraulic seal type “D” the relief valve must be replaced with one that has a higher opening pressure (40 bar).

This valve has order no. 503 83 17-01.

Use tool no. 502 42 50-01 to replace the valve.



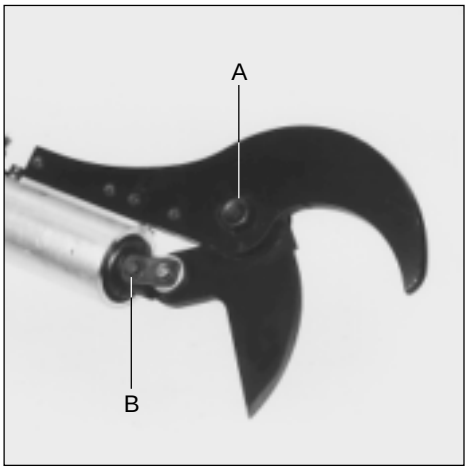
502 42 50-01



The hydraulic motors with the designation "E" punched on the cover have a slightly different seal mounting compared with type "D".

On these motors the hydraulic seal is the same as on the "D" type, but is fitted directly in the motor housing without the seal holder (C).

The new mounting, type "E", has been introduced into production from serial number 709 50 33 on the handle.



Cutting equipment

Model 235P

Replacing the pruning blades

Remove the nut, circlip and bearing pin.

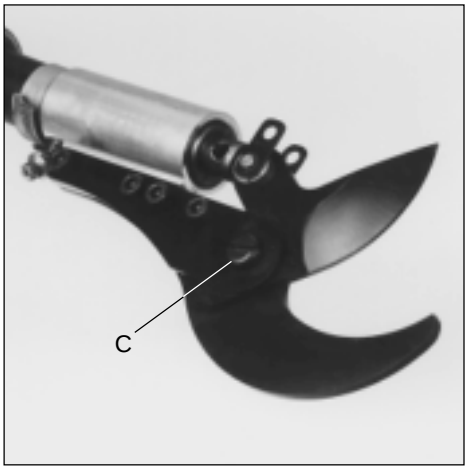
Cutting equipment

Model 235P

Replacing the pruning blades

Remove the nut (A) and circlip (B). Hold your thumb over the circlip so it does not fly away.

Remove the bearing pin.



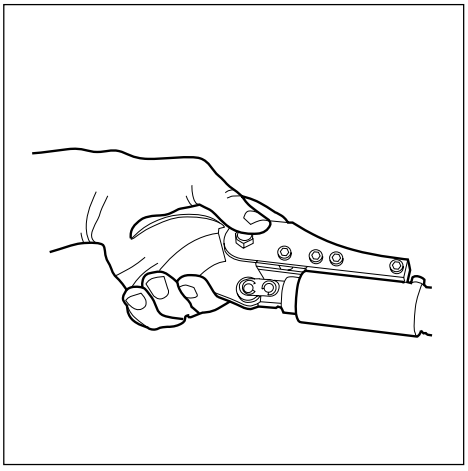
Remove the bolt and bearing sleeve and the moving blade.

Grind or replace the blade and reassemble in the reverse order set out for dismantling.

Remove the bolt (C) with its bearing sleeve.

Remove the moving blade for grinding or replacement.

Reassemble in the reverse order set out for dismantling.

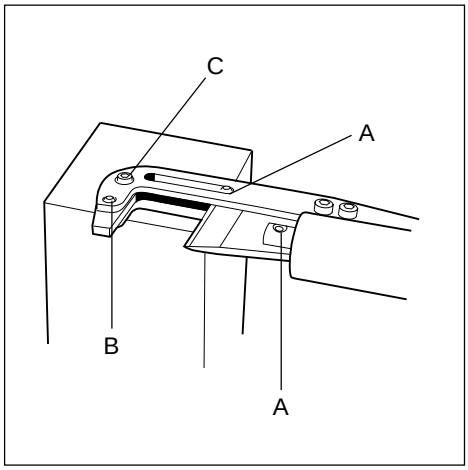


Ensure the moving blade can move unimpeded when the pruner is squeezed together by hand.

It should move to the open position under its own force.

Ensure the moving blade can move unimpeded when the pruner is squeezed together by hand.

It should move to the open position under its own force.



Replacing the pressure blade

Dismantle the spiral pins (A) and (B) and the bolt (C).

Lift off the stop and blade.

Replacing the pressure blade

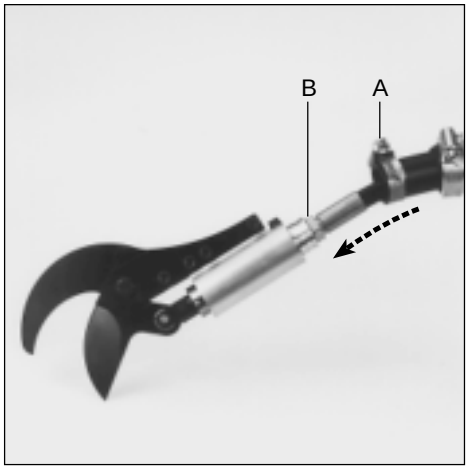
Dismantle the stop by removing bolt (C) and pressing out the spiral pin (B).

Dismantle the pressure blade by pressing out both spiral pins (A).

NOTE!

Put a support under the cutting equipment to avoid deformity.

Assemble in the reverse order set out for dismantling.



Replacing the seals in the hydraulic cylinder

Dismantling

Loosen the hose clip.

Pull out the hydraulic hose and loosen it by the cutting equipment.

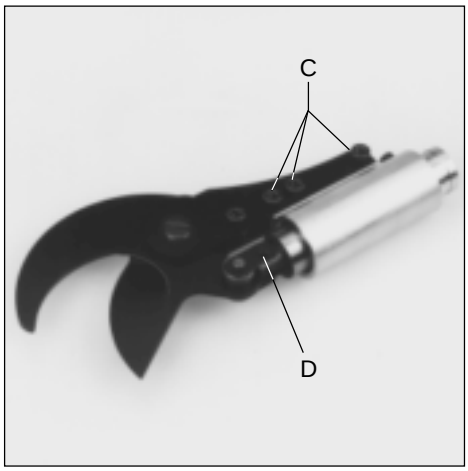
Replacing the seals in the hydraulic cylinder

Dismantling

Loosen the hose clip (A) and pull out the entire cutting equipment so the hydraulic hose connector (B) is accessible.

Unscrew the hydraulic hose.

Drain the oil from the hydraulic cylinder.

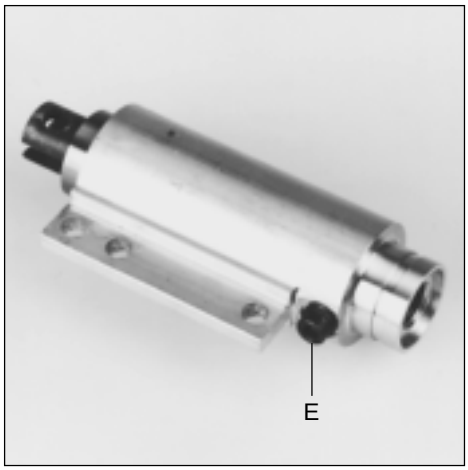


Remove the 3 bolts (C) and the bearing pin respective spiral pin (D).

Remove the cutting equipment.

Remove the 3 bolts (C) and the bearing pin respective spiral pin (D).

Remove the cutting equipment.

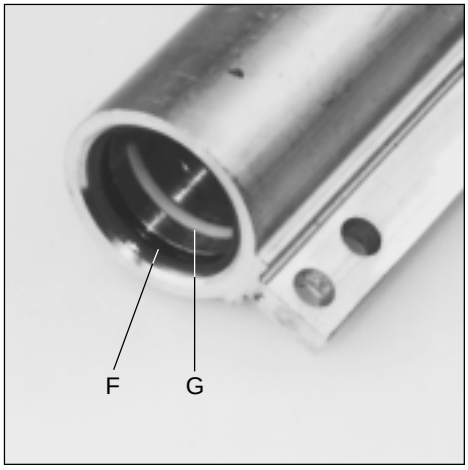


Loosen the screw (E) just enough so the return spring releases.

Make sure the hydraulic piston is fully inserted in the cylinder.

Now loosen the screw (E) just enough so the return spring releases.

Pull the piston out of the cylinder.



Dismantle the sealing ring, slide ring and O-ring.

Carefully pry out the sealing ring (F) from its groove using a small screwdriver and the slide ring (G) (and the underlaying O-ring) with a pointed object.

NOTE!

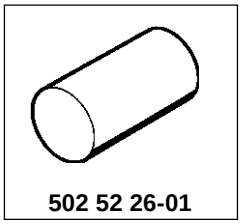
Take immense care so that the hydraulic cylinder's slide surface is not damaged.

Assembling

Clean and check all components with regard to wear and damage.

Replace the piston and cylinder if the slide surfaces are scored.

Fit the O-ring in the groove.



502 52 26-01

Assembling

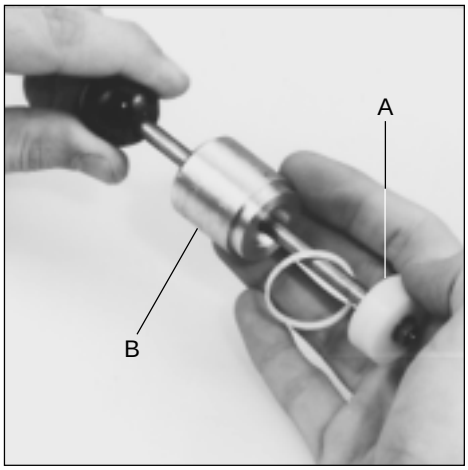
Clean and check all components with regard to wear and damage.

NOTE!

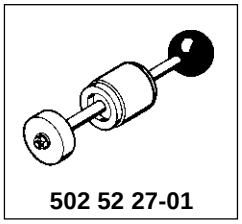
If the piston and cylinder have score marks on the slide surfaces these should be replaced by new components.

Fit the O-ring in the groove.

First slide the spacer 502 52 26-01 in the cylinder and then push the O-ring in the groove.



Use assembly tool 502 52 27-01 to fit the new slide ring.



502 52 27-01

Remove the spacer from the cylinder.

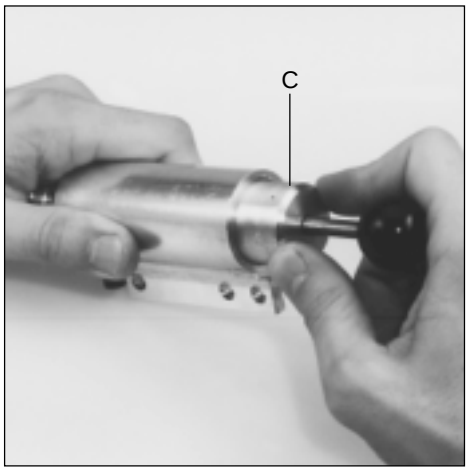
Fit a new slide ring.

Use assembly tool 502 52 27-01.

Place the ring loosely on the bar between the punch (A) and stop (B).

Insert the punch and slide ring in the cylinder so that they come under the groove.

Insert the punch and slide ring in the cylinder so that they come under the groove where the previously fitted O-ring is positioned.



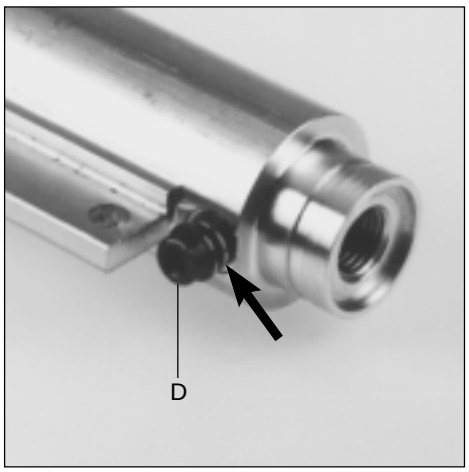
Slide the stop (C) down towards the cylinder and pull the ball on the tool until the slide ring snaps into position.

Slide the stop (C) down towards the cylinder edge.

Now pull the ball on the tool until the slide ring snaps into position.

Fit a new wiper ring and ensure that it enters the groove correctly.

Fit a new wiper ring and ensure that it enters the groove correctly.



Lubricate the piston and cylinder using hydraulic oil.

Fit the piston in the cylinder and secure the spring to the bottom of the cylinder using bolt (D).

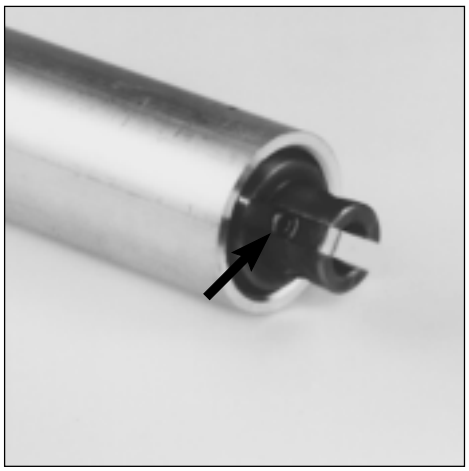
Lubricate the piston and cylinder using hydraulic oil.

Insert the piston and return spring in the cylinder and screw in the bolt (D) through the eye on the spring.

If necessary loosen the screw that holds the spring in position on the piston to facilitate assembly.

NOTE!

Check that the sealing washer under screw (D) is in position and undamaged.



Check that the screw holding the return spring is tensioned.

Fit the cutting equipment and the hydraulic hose in the reverse order set out for dismantling.

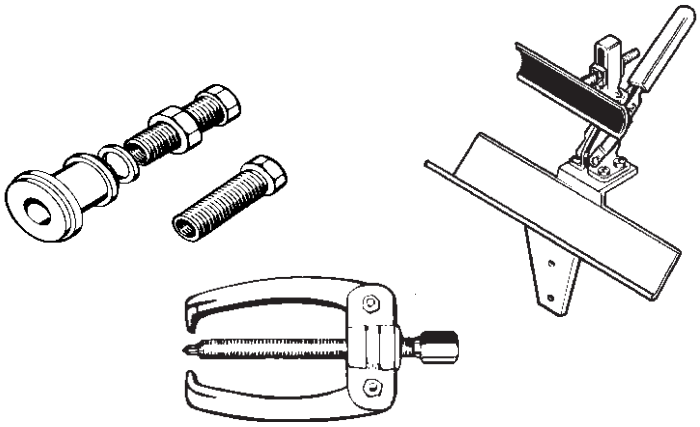
Tighten the screw holding the spring on the piston if it was loosened earlier to facilitate assembly.

Fit the cutting equipment and the hydraulic hose in the reverse order set out for dismantling.

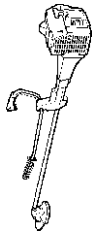
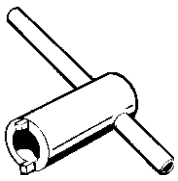
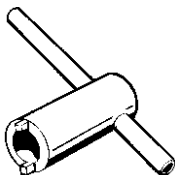
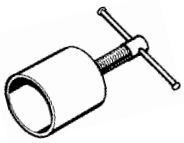
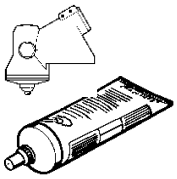
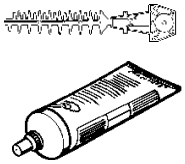
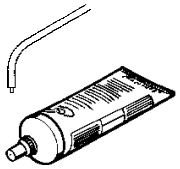
Check that the sealing washer on the hose connector is not damaged. Fit with a new if necessary.

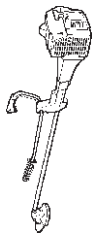
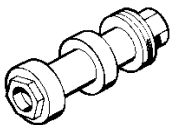
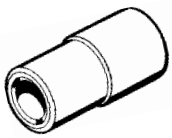
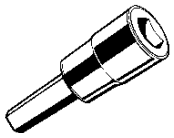
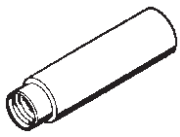
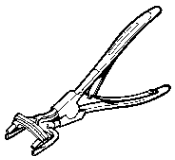
Tools

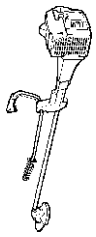
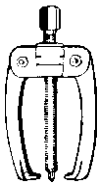
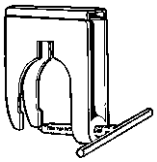
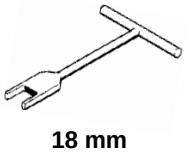
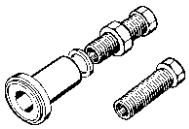
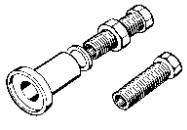
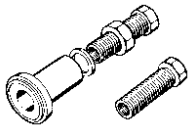
10.

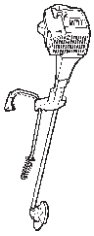
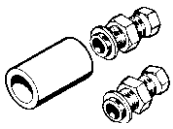
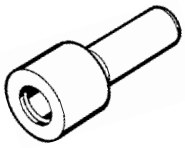
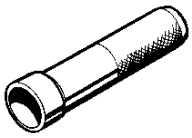
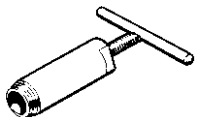
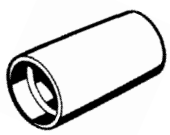
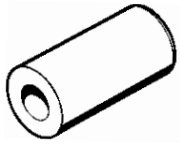


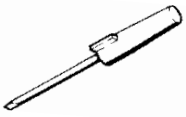
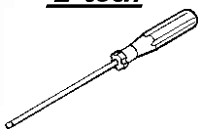
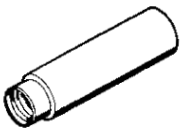
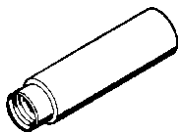
Contents

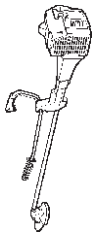
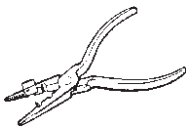
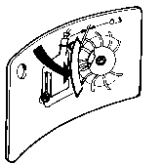
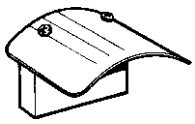
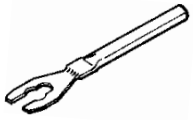
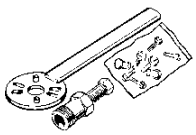
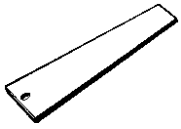
	Angle gear, gearbox					
Model	 502 51 11-01	 502 51 68-01	 502 50 65-01	 503 97 64-01	 503 62 12-01	 503 80 17-01
265		●	●	●		
252	●		●	●		
250	●		●	●		
240/245			●	●		
225/232/235				●		
240RBD				●		●
122				●		
32				●		
Mondo Mega				●		
Mondo						●
Mondo Max				●		
250PS						
235P						
225 H60/H75					●	
18H					●	
322						●
325				●		
140B/141B						

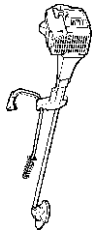
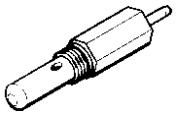
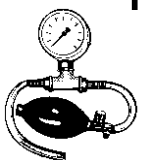
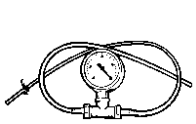
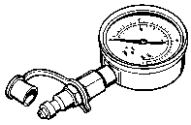
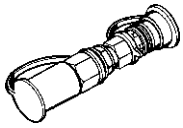
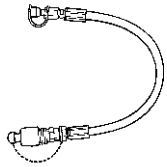
	Angle gear, gearbox		Centrifugal clutch			
Model	 502 52 17-01	 502 52 15-01	 502 52 13-01 (4 mm) 502 52 14-01 (6 mm)	 502 52 16-01	 505 26 79-12	 502 50 49-01
265						●
252	●	●		●	●	
250	●	●		●	●	
240/245	●	●				
225/232/235				●		
240RBD				●		
122						
32						
Mondo Mega						
Mondo						
Mondo Max						
250PS			●	●		
235P				●		
225 H60/H75						
18H				●		
322				●		
325				●		
140B/141B						

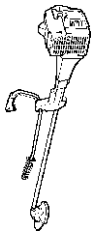
	Bearings	Crankcase	Vibration damper	Crankshaft		
Model			 18 mm			
	504 90 90-01	502 51 61-01	502 50 66-02	502 50 30-10	502 50 30-07	502 50 30-08
265	●	●				●
252		●	●		●	
250		●	●		●	
240/245	●			●		
225/232/235						
240RBD	●					
122						
32						
Mondo Mega						
Mondo						
Mondo Max						
250PS		●	●		●	
235P						
225 H60/H75						
18H	●	●				
322						
325						
140B/141B		●				

	Crankshaft	Sealing ring				
Model	 502 50 30-09	 504 91 28-06	 505 38 17-09	 504 91 40-01	 502 50 53-01	 504 91 28-00
265		●	●	●	●	●
252	●	●	●	●		●
250	●	●	●	●		●
240/245		●	●			
225/232/235						
240RBD						
122			●			
32						●
Mondo Mega						●
Mondo						●
Mondo Max						●
250PS		●	●	●		●
235P		●				
225 H60/H75			●			
18H						
322						
325						
140B/141B						

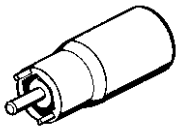
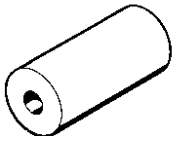
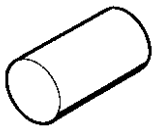
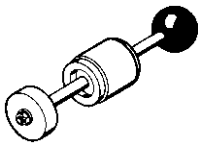
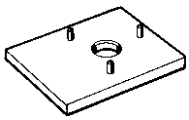
	Fuel system			Ignition system		
Model	 502 50 83-01	 501 60 02-01	CARB EPA E-tech  531 00 48-63	 502 51 94-01	 505 26 79-12	 502 71 13-01
265	●	●				●
252	●	●				●
250	●	●				●
240/245	●	●	●			●
225/232/235	●	●	●	●		●
240RBD	●	●	●			●
122	●	●				●
32	●	●	●			●
Mondo Mega	●	●	●			●
Mondo	●	●	●			●
Mondo Max	●	●	●			●
250PS	●	●			●	●
235P	●	●	●			●
225 H60/H75	●	●	●			●
18H	●	●	●			●
322	●	●	●			●
325	●	●	●			●
140B/141B	●	●				

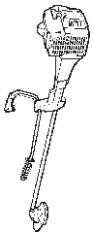
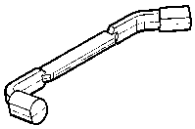
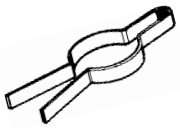
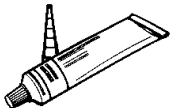
	Ignition system					Leakage testing
Model	 502 50 06-01	 502 51 34-02	 531 00 48-61	 531 00 48-62	 502 51 49-01	 502 54 11-01
265	●	●			●	●
252	●	●				●
250	●	●				●
240/245	●	●				●
225/232/235	●	●				●
240RBD	●	●				●
122	●		●	●		●
32	●	●		●		●
Mondo Mega	●	●				●
Mondo	●	●		●		●
Mondo Max	●	●				●
250PS	●	●			●	●
235P	●	●				●
225 H60/H75	●	●				●
18H	●	●				●
322	●	●				●
325	●	●				●
140B/141B	●	●			●	●

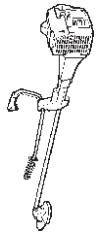
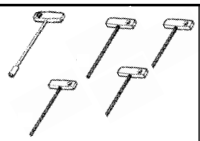
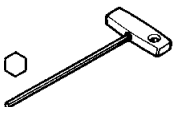
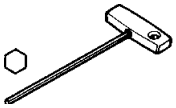
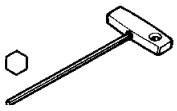
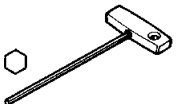
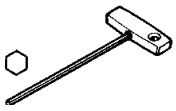
	Leakage testing			Hydraulic unit		
Model	 503 84 40-01	 + 502 50 38-01	 − 502 50 37-01	 502 52 28-01	 502 52 30-01	 502 42 45-01
265	●	●	●			
252	●	●	●			
250	●	●	●			
240/245	●	●	●			
225/232/235	●	●	●			
240RBD	●	●	●			
122	●	●	●			
32	●	●	●			
Mondo Mega	●	●	●			
Mondo	●	●	●			
Mondo Max	●	●	●			
250PS	●	●	●	●		●
235P	●	●	●	●	●	
225 H60/H75	●	●	●			
18H	●	●	●			
322	●	●	●			
325	●	●	●			
140B/141B	●	●	●			

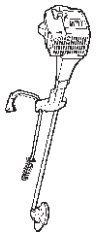
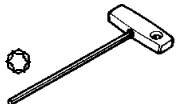
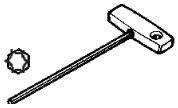
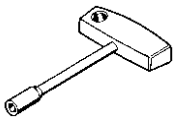
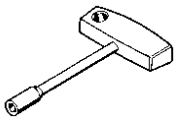
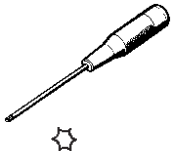
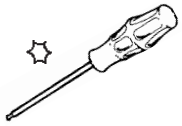


Cutting equipment

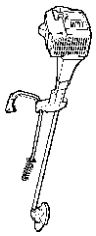
Model	 502 42 50-01	 502 52 24-01	 502 52 25-01	 502 52 26-01	 502 52 27-01	 502 52 23-01
265						
252						
250						
240/245						
225/232/235						
240RBD						
122						
32						
Mondo Mega						
Mondo						
Mondo Max						
250PS	●	●	●			●
235P				●	●	
225 H60/H75						
18H						
322						
325						
140B/141B						

	Cylinder/piston					Workshop equipment
Model	 504 91 06-05	 502 54 15-01	 502 50 70-01	 531 00 48-65	 505 38 17-05	 503 26 70-01
265		●	●		●	
252	●		●		●	
250	●		●		●	
240/245	●		●		●	●
225/232/235	●		●		●	●
240RBD	●		●		●	●
122			●	●	●	●
32	●		●		●	
Mondo Mega	●		●		●	●
Mondo	●		●		●	●
Mondo Max	●		●		●	●
250PS	●		●		●	
235P	●		●		●	●
225 H60/H75	●		●		●	●
18H	●		●		●	●
322	●		●		●	●
325	●		●		●	●
140B/141B	●		●		●	

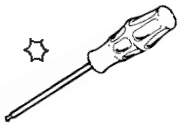
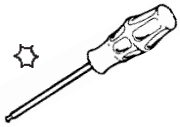
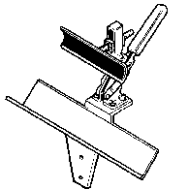
	Workshop equipment					
Model	 *504 90 00-01–04 + 502 50 22-01 =* 504 90 00-06	 **3 mm** 504 90 00-04	 **4 mm** 504 90 00-02	 **5 mm** 504 90 00-03	 **6 mm** 504 90 00-01	 **3/16"** 502 50 57-01
265			●			
252		●	●			
250		●	●			
240/245		●	●			
225/232/235			●			
240RBD			●			
122						
32						●
Mondo Mega						●
Mondo			●			●
Mondo Max						●
250PS		●	●			
235P			●			
225 H60/H75			●			
18H						●
322			●	●		
325			●	●		
140B/141B			●	●		

	Workshop equipment					
Model	 **25 x 150** 502 71 27-01	 **30 x 200** 502 71 31-01	 **8 mm** 502 50 22-01	 **10 mm** 502 50 23-01	 502 51 67-01	 **M 6** 502 50 88-01
265						
252						
250						
240/245			●			
225/232/235						
240RBD						
122						
32						
Mondo Mega						
Mondo						
Mondo Max						
250PS						
235P						
225 H60/H75						
18H						
322						
325						
140B/141B			●	●		

10 List of tools

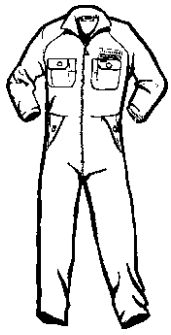


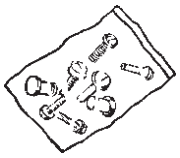
Workshop equipment

Model	 M5 502 50 87-01	 M4 502 50 86-01	 502 02 61-02	Degreasing agent  505 69 85-70	 502 71 14-01	 502 51 03-01
265	●			●	●	●
252	●	●		●	●	●
250	●	●		●	●	●
240/245	●	●		●	●	●
225/232/235	●			●	●	●
240RBD	●			●	●	●
122			●	●	●	●
32				●	●	●
Mondo Mega				●	●	●
Mondo				●	●	●
Mondo Max				●	●	●
250PS	●	●		●	●	
235P	●			●	●	●
225 H60/H75	●			●	●	
18H				●	●	
322	●			●	●	●
325	●			●	●	●
140B/141B	●			●	●	

List of tools

Workshop equipment



Model	 502 51 54-01	 502 21 58-01	Size S: 101 64 23-48 M: 101 64 23-50 L: 101 64 23-52 XL: 101 64 23-54 XXL: 101 64 23-56			
265	●		●			
252		●	●			
250		●	●			
240/245			●			
225/232/235			●			
240RBD			●			
122			●			
32			●			
Mondo Mega			●			
Mondo			●			
Mondo Max			●			
250PS			●			
235P			●			
225 H60/H75			●			
18H			●			
322			●			
325			●			
140B/141B			●			

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